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NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

THESIS

**ONE STEP BACK, TWO STEPS FORWARD: AN
ANALYTICAL FRAMEWORK FOR AIRPOWER IN
SMALL WARS**

by

Ronald F. Stuewe, Jr.

June 2006

Thesis Advisor:
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Kalev Sepp
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**ONE STEP BACK, TWO STEPS FORWARD: AN ANALYTICAL
FRAMEWORK FOR AIRPOWER IN SMALL WARS**

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Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE IN DEFENSE ANALYSIS

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ABSTRACT

Airpower capability and military technology have created a vision of airpower that focuses on the lethality of weaponry instead of the use of that weaponry as a political tool. Unfortunately, such a lethality-focused force optimized to fight interstate conflicts, by definition, ensures that this force is sub-optimal for waging wars at the sub-state level.

Small wars are conflicts where the political and diplomatic context, and not the military disposition of the combatants, is usually the determining factor. Following World War II there emerged an era of insurgencies and limited wars of territorial dispute. These small wars required new operational and tactical innovations involving the use of airpower, as the very nature of these wars differed from conventional conflict towards which most of aviation was geared.

This thesis analyzes six historical cases involving the use of airpower across a wide spectrum of small wars through the lens of an analytical framework for countering insurgencies. While the typologies of no two conflicts are identical, and the application of airpower equally varied, this work provides fundamental assertions and implications regarding the proper use of airpower for waging war at this level.

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TABLE OF CONTENTS

I.	INTRODUCTION.....	1
A.	RELEVANCE	1
B.	PURPOSE.....	2
1.	Primary Research Question.....	2
2.	Secondary Research Questions.....	2
C.	SCOPE AND METHODOLOGY	3
1.	Definitions.....	3
2.	Case Study Selection.....	5
D.	ORGANIZATION	6
E.	BENEFITS OF THE STUDY	7
II.	LEITES AND WOLF SYSTEM MODEL.....	9
A.	BACKGROUND ON ANALYTICAL FRAMEWORKS	9
B.	THE LEITES AND WOLF FRAMEWORK.....	10
C.	COUNTERS BASED ON THE LEITES AND WOLF FRAMEWORK.....	12
III.	SMALL WARS OF THE BRITISH.....	15
A.	INTRODUCTION.....	15
B.	THE MALAYAN EMERGENCY.....	16
1.	Background	16
2.	Environment.....	16
3.	Opposition Strategy	17
4.	Popular and External Support	17
5.	Framework for Analysis.....	17
a.	<i>Input Denial</i>	17
b.	<i>Countering the Production Process</i>	18
c.	<i>Counterforce</i>	18
d.	<i>Active Defense</i>	19
C.	THE FALKLAND ISLANDS	20
1.	Background	20
2.	Environment.....	20
3.	Opposition Strategy	21
4.	Popular and External Support	21
5.	Framework for Analysis.....	22
a.	<i>Input Denial</i>	22
b.	<i>Countering the Production Process</i>	23
c.	<i>Counterforce</i>	23
d.	<i>Active Defense</i>	24
D.	ANALYSIS	24
IV.	SMALL WARS OF THE FRENCH	25
A.	INTRODUCTION.....	25

B.	THE FIRST INDOCHINA WAR (1946-1954).....	25
1.	Background	25
2.	Environment.....	26
3.	Opposition Strategy	26
4.	Popular and External Support	27
5.	Framework for Analysis.....	28
a.	<i>Input-Denial</i>	29
b.	<i>Countering the Production Process</i>	30
c.	<i>Counterforce</i>	30
d.	<i>Active Defense</i>	31
e.	<i>Airpower during Dien Bien Phu</i>	32
C.	ALGERIA.....	33
1.	Background	33
2.	Environment.....	33
3.	Opposition Strategy	34
4.	Popular and External Support	34
5.	Framework for Analysis.....	35
a.	<i>Input-Denial</i>	35
b.	<i>Counter Production Process</i>	36
c.	<i>Counterforce</i>	37
d.	<i>Active Defense</i>	38
D.	ANALYSIS	39
V.	SMALL WARS OF THE UNITED STATES	41
A.	INTRODUCTION.....	41
B.	THE ANTI-HUK CAMPAIGN	42
1.	Background	42
2.	Environment.....	43
3.	Opposition Strategy	44
4.	Popular and External Support	44
5.	Framework for Analysis.....	45
a.	<i>Input-Denial</i>	46
b.	<i>Countering the Production Process</i>	46
c.	<i>Counterforce</i>	47
d.	<i>Active Defense</i>	48
C.	EL SALVADOR.....	49
1.	Background	49
2.	Environment.....	50
3.	Opposition Strategy	51
4.	Popular and External Support	52
5.	Framework for Analysis.....	52
a.	<i>Input-Denial</i>	53
b.	<i>Counter Production Process</i>	54
c.	<i>Counterforce</i>	55
d.	<i>Active Defense</i>	56
D.	ANALYSIS	57

VI.	ANALYSIS OF THE PROPER ROLE OF AIRPOWER IN SMALL WARS.....	59
A.	AIR SUPERIORITY	60
B.	INTERDICTION AND LIMITING OF RESOURCES.....	61
C.	HARASSMENT, DISRUPTION, AND PSYCHOLOGICAL OPERATIONS.....	63
D.	AIR ATTACK AND THE KINETIC APPLICATION OF AIRPOWER.....	64
E.	SURVEILLANCE, PRESENCE, AND INFLUENCE	66
F.	AIR MOBILITY AND SUPPLY	68
G.	ASSESSMENT	70
VII.	CONCLUSION AND ADDITIONAL CONSIDERATIONS FOR THE APPLICATION OF AIRPOWER.....	71
A.	RECONSIDERATION OF COMMAND AND CONTROL ISSUES	71
B.	MAXIMIZING THE INHERENT FLEXIBILITY OF AIRPOWER.....	72
C.	UNDERSTANDING THE CAPABILITIES AND LIMITATIONS OF TECHNOLOGY	73
D.	EDUCATION, INFLUENCE, AND LEADERSHIP	73
	LIST OF REFERENCES.....	75
	INITIAL DISTRIBUTION LIST	83

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LIST OF FIGURES

Figure 1.	Leites and Wolf's insurgency as a system. (Reprinted from Nathan Leites and Charles Wolf Jr., <i>Rebellion and Authority: An Analytic Essay on Insurgent Conflicts</i> [Santa Monica, CA: RAND, 1970], 35.).....	11
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I. INTRODUCTION

A. RELEVANCE

So policy converts the overwhelmingly destructive element of war into a mere instrument. It changes the terrible battlesword that a man needs both hands and his entire strength to wield, and with which he strikes home once and no more, into a light, handy rapier—sometimes just a foil for the exchange of thrusts, feints and parries.

- Karl von Clausewitz, *On War*

Ever since the invention of the airplane a century ago, airpower advocates have found it to be a useful weapon for enforcing authority. Airpower in the coercive role historically has made a powerful battlesword. Following World War II, however, there emerged an era of nationalist and communist-led insurgencies and limited wars of territorial dispute. These small wars required new operational and tactical innovations involving the use of airpower as the very nature of these wars greatly differed from that of conventional state-on-state conflict which most of aviation was geared towards. The battlesword was no longer the optimal weapon for these engagements.

Small wars are conflicts where the political and diplomatic context, and not the military disposition of the combatants, is usually the determining factor. The paradox of small wars from an airpower standpoint is that the more asymmetric military capabilities become, the less advantage they afford against an adversary disposed to use his asymmetric strengths. A danger manifests itself in a competent adversary who realizes “they cannot survive in the environment our technical capabilities have created. Ironically, the interplay of our superior military capabilities with the recognition of this fact by our adversaries will ensure the character of future wars will be such that our ‘asymmetric’ technological advantages will be substantially diminished.”¹

Unfortunately, military technology and airpower capability have created a vision of airpower that focuses more on the lethality of weaponry instead of on the use of that weaponry as a political tool.² Such a lethality-centered force optimized to fight large,

¹ U.S. Marine Corps, *Small Wars* (Draft) (Washington D.C.: Department of the Navy); <http://www.smallwars.quantico.usmc.mil/2003SmallWars.asp> (accessed May 2005), 10.

² Mark Clodfelter, *The Limits of Air Power: The American Bombing of North Vietnam* (New York: Free Press, 1989), 203.

interstate conflicts, by definition, ensures that this force is sub-optimal for waging small wars. Perhaps even more importantly, however, small war theory continues to be woefully absent from aviation theory and doctrine.³ This general attitude of indifference to the uniqueness of small wars is contrary to a torrent of well-documented literature indicating that this form of warfare is the most likely kind of future conflict, is fundamentally different from “conventional” warfare, and requires something other than conventional measures.⁴ The question naturally arises, what can airpower offer within the rubric of small wars?

The answer to this question can be found by taking one step back and analyzing the role and effectiveness that airpower played in previous small wars. As author Max Boot eloquently suggests, “The past is an uncertain guide to the future, but it is the only one we have.”⁵ By understanding the capabilities of airpower within a historical perspective we are able to take two steps forward with an understanding of the operational necessities to successfully engage in small, as well as large wars.

B. PURPOSE

1. Primary Research Question

What is the proper application of airpower in small wars given the historical precedents set during a broad range of previous wars waged at the sub-state level?

2. Secondary Research Questions

- Exactly what is a small war and is this the most effective term to describe sub-state warfare?
- What is the most appropriate definition for airpower?
- Small wars predate the comparatively short history of airpower. Is there a realistic breakpoint for applicable research?
- What historical case studies within this timeline provide relevant parallels to possible small wars of the future?
- What prominent examples of small wars should not be included in the analysis?

³ For an excellent argument on this point see Maj Kenneth Beebe, “The Air Force’s Missing Doctrine: How the US Air Force Ignores Counterinsurgency,” *Air & Space Power Journal* 20, no. 1 (Spring 2006): 27-34.

⁴ Colonel Dennis Drew, *Insurgency and Counterinsurgency: American Military Dilemmas and Doctrinal Proposals* (Maxwell Air Force Base, AL: Air University Press, 1988), 2.

⁵ Max Boot, *The Savage Wars of Peace: Small Wars and the Rise of American Power* (New York: Basic Books, 2002), 336.

- What principles gleaned from experiences can be applied to the use of airpower in future small wars?

C. SCOPE AND METHODOLOGY

1. Definitions

Authors and historians have used terms such as small war, limited war, operations other than war, and irregular war in various ways and often interchangeably. In order to avoid obfuscation it is necessary to provide a brief etymology of such terms.

During the majority of the post World War II era, most wars were made part of the larger superpower struggle. By the 1960s, the focus was almost entirely on counterinsurgency and methods associated with it. In the 1980s this conceptualization broadened to the term “low-intensity conflict” or LIC.⁶ The 1990 release of army and air force doctrine defined LIC as:

A political-military confrontation between contending states or groups below conventional war and above the routine, peaceful competition among states. It frequently involves protracted struggles of competing principles and ideologies. Low-intensity conflict ranges from *subversion* to the use of the armed forces. It is waged by a combination of means, employing political, economic, informational, and military instruments. Low-intensity conflicts are often localized, generally in the Third World, but contain regional and global security implications.⁷

Airpower theorist, Dr. Dennis Drew, suggests that low-intensity conflict “is a dismally poor title for a type of warfare in which thousands die, countless more are physically or psychologically maimed and, in the process, the fate of nations hangs in the balance.”⁸ He further suggests that:

Worse than being nondescriptive, the term low-intensity conflict is chauvinistic, the product of a proud superpower seeing only its own version of reality. What Americans have titled low-intensity conflicts may have been minor affairs in the life of a superpower. However, to other nations and peoples—those directly involved—they are no small affairs. To those nations, such conflicts have been passionate, all-consuming struggles.⁹

⁶ Steven Metz, “Small Wars: From Low Intensity Conflict to Irregular Challenges,” in *Rethinking the Principles of War*, ed. Anthony D. Mc Ivor (Annapolis, MD: Naval Institute Press, 2005), 287.

⁷ U.S. Army Field Manual 100-20/AFM 3-20, Military Operations in Low-Intensity Conflict.

⁸ Drew, *Insurgency and Counterinsurgency*, 3.

⁹ Drew, *Insurgency and Counterinsurgency*, 3.

During the 1990s the phrase “military operations other than war” or MOOTW replaced low-intensity conflict. Such a change was more semantic than significant as counterinsurgency operations became less dominant compared to international peacekeeping and counterterrorism.¹⁰ MOOTW represents, at best, a catchall phrase to include anything at the low end of the spectrum of warfare—mainly anything other than major conventional or nuclear war.¹¹

The term “small war” originated in the late nineteenth century. C.E. Callwell in his influential work, *Small Wars: Their Principles and Practice* defined the term as “all campaigns other than those where both the opposing sides consist of regular troops.”¹² This thesis instead uses the definition put forward in the U.S. Marine Corps 1940 Small Wars Manual: small wars are “operations undertaken under executive authority, wherein military force is combined with diplomatic pressure in the internal or external affairs of another state whose government is unstable, inadequate or unsatisfactory for the preservation of life and of such interests as are determined by the foreign policy of [the nation].”¹³ The term does not necessarily refer to the size or scope of the war; instead, it refers to the political and diplomatic context in which the war is fought. In essence, “in a major war, the mission assigned to the armed forces is usually unequivocal—the defeat and destruction of the hostile forces. This is seldom true in small wars.” The more ambiguous mission in a small war: “to establish and maintain law and order by supporting or replacing the civil government in countries or areas in which the interest of the [country] have been placed in jeopardy.”¹⁴

Dr. David Dean devised a simple, three-level framework for a military to be effective in small wars. These three levels included: assistance, integration, and intervention.¹⁵ Assistance deals primarily with noncombat training and support directly

¹⁰ Metz, “Small Wars,” 287.

¹¹ Beebe, “The Air Force’s Missing Doctrine,” 29.

¹² Colonel C. E. Callwell, *Small Wars: Their Principles and Practice*, 3rd ed. (Lincoln, NE: Bison Books, 1996), 21.

¹³ U.S. Marine Corps, *Small Wars Manual* (Washington, D.C.: Government Printing Office, 1940), 1.

¹⁴ Boot, *The Savage Wars of Peace*, 284.

¹⁵ Lieutenant Colonel David J. Dean, “The USAF In Low-Intensity Conflict: The Special Air Warfare Center” *Air University Review*, January-February 1985, <http://www.airpower.maxwell.af.mil/airchronicles/aureview/1985/jan-feb/dean.html>, (accessed January 2006).

to friendly airpower forces. Integration is more colloquially referred to as Foreign Internal Defense (FID). While a vitally important and seldom appreciated aspect of small wars, this work purposely omits this level of interaction to focus on the more narrow aspect of foreign “intervention” in small wars.¹⁶

The parsing of these terms is important for the delineation of conceptual ideas and doctrinal definitions. Professor Andrew Bacevich, however, cogently advises against relying too heavily on mere definitions given such an important subject:

Let us not comfort ourselves with innocuous labels like nation-building or internal defense and development. Nor should we be misled by pedantic definition of insurgency or ‘national liberation.’ Recognize that more is involved than supporting some doctrine named for a departed president. Look beyond the functions of security assistance, training, and advice. Call it war, and having done so, act accordingly.¹⁷

2. Case Study Selection

The use of multiple case studies can be traced to the champion of the indirect approach, B.H. Liddell Hart. He correctly warned: “The method in recent generations has been to select one or two campaigns, and to study them exhaustively as a means of professional training and as the foundation of military theory. But with such a limited basis the continual changes in military means from war to war carry the danger that our outlook will be narrow and the lesson fallacious.”¹⁸ The use of the particular six case studies in this thesis attempts to avoid this particular pitfall by representing what can best be described as a continuum of small wars.

The cases are similar in many regards. Each involves a prominent and technically capable Western power embroiled in a post World War II small war. Selecting cases from this period provides the most salient break point for analyzing the role of airpower as all of the nations involved enjoyed airpower capabilities that accurately mirror those of

¹⁶ Airpower units constructed to perform FID missions are ruefully diminutive when compared to the juggernaut of those that execute conventionally-minded operations. The United States Air Force (USAF) is a case in point. As of this writing, the 6th Special Operations Squadron, located at Hurlburt Field, FL, is the only USAF unit dedicated to Foreign Internal Defense missions and helping cooperating governments plan counterinsurgency efforts. See Norman J. Brozenick, Jr., *Small Wars, Big Stakes: Coercion, Persuasion, and Airpower in Counterrevolutionary War* (Maxwell Air Force Base, AL: School of Advanced Airpower Studies, June 1998), 6.

¹⁷ A. J. Bacevich et al., *American Military Policy in Small Wars: The Case of El Salvador* (Washington, D.C.: Pergamon-Brassey’s, 1988), 50-51.

¹⁸ B. H. Liddell Hart, *Strategy*, 2d ed. (New York: Penguin, 1991), 4.

the present day. Each protagonist had available the capability and personnel to utilize both fixed and rotary-wing assets, propeller and jet-powered craft, and airpower assets from dedicated air forces as well as naval and army branches. Thus, airpower, as referred to in this work, consists of any capability to exploit the medium above the Earth's surface.

More importantly, however, the differences these six cases embody provide a representative sample from the wide array of small wars of intervention.¹⁹ These range from insurrections and rebellions to internal civil wars and territorial disputes. Opposition strategies and support bases similarly embody an array of differences. Not surprisingly, in the Cold War era following World War II many small wars developed due to ideological differences. This work investigates several such cases but also examines religious, ethnic, and economic foundations for hostilities. Finally, and essential for analyzing the role and effectiveness of airpower, these cases represent a vast array of topographic and climactic settings; from vast deserts to dense jungles and weather conditions ranging from sweltering heat to frigid Antarctic cold.

While not necessarily definitive, six case studies sufficiently demonstrate the validity of the conceptual framework presented here. Again, the complex nature of the subject of small wars defies facile generalizations. The framework presented here attempts to emphasize practicality over mere theory.²⁰

D. ORGANIZATION

Chapter II serves to introduce the conceptual framework for analysis by describing the model originally put forward by Rand researchers Nathan Leites and Charles Wolf in *Rebellion and Authority: An Analytic Essay on Insurgent Conflicts*. By analyzing insurgent conflict as a system, these authors developed a four-stage strategy to defeat insurgencies based on their implicit vulnerabilities. The analysis of this multifaceted strategy, and generalizations regarding the role of airpower within the strategy, lay the foundation for the analysis of each of the case studies.

¹⁹ The Marine Corps Small Wars Center of Excellence currently lists 407 current and previous "small wars." See http://www.smallwars.quantico.usmc/mil/sw_today.asp (accessed June 2005).

²⁰ Bard O'Neill, *Insurgency & Terrorism: From Revolution to Apocalypse*, 2nd ed. (Washington D.C.: Potomac Books, 2005), 199.

The six case studies comprise Chapters III, IV, and V. Individual chapters contain two case studies for a particular Western nation. For consistency, I structure each case study similarly. This includes: background information, environmental factors such as topographic and demographic information, opposition strategies, and popular and external support for the opposition. Following the background information, I discuss airpower assets involved and apply the Leites and Wolf analytical framework to assess the role of airpower. Each chapter concludes with a brief analysis of the role of airpower utilized by the particular Western nation in the two given small wars. In Chapter III, I present the involvement of Great Britain in both the Malayan Emergency (1948-1960) and the Falklands Campaign of 1982.²¹ In Chapter IV, I cover the French struggles in Indochina (1946-1954) and in Algerian (1954-1962). Finally, in Chapter V, I present select examples of the United States' small wars in the Anti-Huk Campaign (1946-1955) and the civil war in El Salvador (1980-1992).²²

In Chapter VI, I briefly review each of the four strategies as laid out within the Leites and Wolf framework. I provide an analysis of the framework itself, and discuss insights not adequately covered by the framework. Chapter VII is my concluding chapter where I summarize my analysis and identify additional considerations for the application of airpower in small wars.

E. BENEFITS OF THE STUDY

If the most likely type of war in which the United States may become involved in the years ahead is a small war, then it is critically important to examine past experiences in that area. The British, French, and United States have all used airpower in small wars

²¹ A common notion regarding the British use of airpower in a small war context is that of the "air control" doctrine especially in the period between the world wars. While the idea of controlling a country by airpower is attractive to airmen and the casualty adverse, the history of air control reveals little to support the idea of policing or peacekeeping by airpower alone. The few cases where it was effective were "the most minor kinds of tribal police operations." Otherwise, some contingent of ground troops was necessary for peacekeeping operation. See James S. Corum and Wray R. Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists* (Lawrence, KS: University Press of Kansas, 2003), especially chap. 2, "Colonial Air Control," 51-86. Other references include James S. Corum, "The Myth of Air Control," *Aerospace Power Journal* 14, no. 4 (Winter 2000): 61-77; Maj Mark Dippold, "Air Occupation: Asking the Right Questions," *Airpower Journal* 11, no. 4 (Winter 1997): 78; Bruce Hoffman, *British Air Control in Peripheral Conflict, 1919-1976* (Santa Monica, CA: Rand, 1989).

²² This thesis purposefully does not cover the use of airpower during the United States experience in Vietnam due to the vast quantities of literature on the subject and the lingering visceral reaction the subject generates. Instead, these two case studies provide less contentious examples of successful campaigns with more definitive involvement of airpower that both supported as well as undermined the socio-political aspect of the conflict.

and these efforts and experiences are worthy of attention.²³ The understanding of how airpower does, and more importantly, does not support the greater political strategy in small wars is paramount to the success of these endeavors. As the former president of the Naval War College reflected, “The nation’s military force must be an adaptive instrument of national power. It must provide political utility across a much more diverse and difficult range of scenarios and circumstances. This force must act as a flexible instrument of policy engagement, not simply a larger sheaf of thunderbolts.”²⁴

²³ Dean, “The USAF in Low-Intensity Conflict,” 9.

²⁴ Vice Admiral Arthur K. Cebrowski, introduction to *Rethinking the Principles of War*, ed. Anthony D. Mc Ivor ed. (Annapolis, MD: Naval Institute Press), xiii.

II. LEITES AND WOLF SYSTEM MODEL

A. BACKGROUND ON ANALYTICAL FRAMEWORKS

The study of small wars and especially insurgencies and counterinsurgency methods increased during the latter half of the twentieth century as the subject is rich with considerable experience and empirical data.²⁵ Many models describe and analyze the varied factors in small wars. The creators of these frameworks represent diverse communities from within academia, policy circles, and the military professions. The frameworks put forward vary considerably in terms of focus, subject, and depth of analysis.²⁶

Perhaps Bard O'Neill of the National Defense University originally put the most influential of these models forward in 1990. His structured analysis provided an effective means to not only analyze insurgent movements but to compare and contrast the multiple nuances inherent in such a complex endeavor which defies facile generalizations.²⁷ Professor Jack Goldstone devised an alternative framework for analysis, one that O'Neill references as required reading for anyone desiring a basic understanding of revolutionary warfare. Goldstone contends that understanding insurgencies depends on the conjuncture of three conditions: "declining state resources relative to expenses and the resources of adversaries, increasing elite alienation and disunity, and growing popular grievances and autonomy."²⁸

A commonality among most of these models is their focus on the popular sympathies, conditions, and environments that evoke rebellion and cause them to grow—

²⁵ Nathan Leites and Charles Wolf Jr., *Rebellion and Authority: An Analytic Essay on Insurgent Conflicts* (Santa Monica, CA: RAND, 1970), v.

²⁶ An additional framework that may be of interest to airpower theorists was put forward by two Army officers who retooled Col John Warden's classic five-ring model specifically to deal with counterinsurgency operations. See Lee K. Grubbs and Michael J. Forsyth, "Is there a Deep Fight in Counterinsurgency" *Military Review* (July-August 2005) at <http://usacac.leavenworth.army.mil/CAC/milreview/download/English/JulAug05/grubbs.pdf>.

²⁷ O'Neill's framework for analysis includes: the insurgent strategy, the operating environment, popular support, organization and unity, and external support. The concepts of strategy and environment are instrumental in delineating cases of insurgent movements and are utilized in the case studies contained in Chapters III through V. See Bard E. O'Neill, *Insurgency & Terrorism: From Revolution to Apocalypse* (New York: Potomac Books, 2005).

²⁸ Jack A. Goldstone, "An Analytical Framework" in *Revolutions of the Late Twentieth Century*, eds. Jack A. Goldstone, Ted Robert Gurr, and Farrokh Moshiri (Westview Press, Boulder, CO, 1991), 49.

in economic terms, they emphasize the demand side of the problem. While important for understanding such movements and analyzing political courses of action in a small war, the demand side of the problem has limited utility to determine the effective use of airpower. An alternative model that emphasizes the supply side of the problem would better highlight the production process of such movements, thus providing more definitive analysis regarding the effectiveness of airpower as a means to counter the production. Nathan Leites and Charles Wolf, Jr. offer such a framework.

B. THE LEITES AND WOLF FRAMEWORK

In 1970 researchers Leites and Wolf of the RAND Corporation published *Rebellion and Authority: An Analytic Essay on Insurgent Conflicts*, which aimed to provide general theories regarding the concept of insurgency and counterinsurgency. The most enlightening of these theories was the development of a model to depict an insurgent movement as a system (see fig.). Although specifically dealing with insurgencies, this system model also works for small wars as defined in Chapter I. Indeed, the protracted and combined sociopolitical-military nature of insurgencies represents the version of small wars most vexing to airpower.²⁹ This model also provides a strategy to defeat insurgencies based on their implicit vulnerabilities. Leites and Wolf derive four primary methods of counterinsurgency. Before analyzing them, however, one must understand the system model itself.

²⁹ Airpower has supported both sides of the insurgency coin. Examples of airpower support to insurgents include the insertion and resupply of the Jedburg teams from the World War II Office of Strategic Services in occupied France; the 1045th Observation, Training, and Evaluation Group's covert missions into Tibet for insertion and resupply of guerrillas trained by the Central Intelligence Agency; and the support rendered by Operation 32, Air Studies Branch to Military Assistance Command Vietnam Studies and Observations Group's long-range infiltration of agents and propaganda operations during the Vietnam War. Larry E. Cable accurately recounts the need of external support, such as air support: "The American guerrilla was all too much like the astronaut, who, whether in his capsule or walking in his moon suit, was dependent completely upon a complicated life support system for viability." *Conflict of Myths: The Development of American Counterinsurgency Doctrine and the Vietnam War* (New York: New York University Press, 1986), 147.

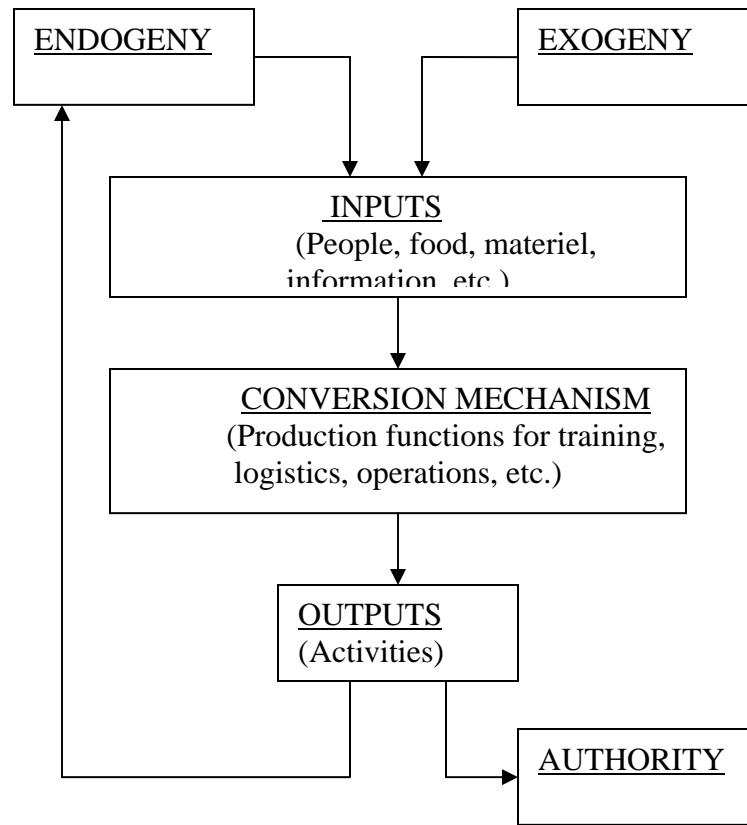


Figure 1. Leites and Wolf's insurgency as a system. (Reprinted from Nathan Leites and Charles Wolf Jr., *Rebellion and Authority: An Analytic Essay on Insurgent Conflicts* [Santa Monica, CA: RAND, 1970], 35.)

To attain overall effectiveness, insurgent movements “require that certain inputs—obtained from either internal or external sources—be converted into certain outputs, or activities.”³⁰ These inputs most often come from the internal (endogenous) environment, examples of which include raw recruits from the population and foodstuffs. External (exogenous) inputs can range from financing to weapons and publicity. Insurgents obtain these inputs by using a combination of persuasive and coercive measures.

The raw inputs then enter a conversion mechanism that entails production functions such as training, equipping, and supplying the insurgency. The effectiveness of the system oftentimes depends on the degree of organization at this level. Developed

³⁰ Leites and Wolf, *Rebellion and Authority*, 32.

systems may have individual branches dedicated to “personnel, financial, and logistic matters, as well as intelligence, communications, and operations.”³¹ Ultimately, the conversion mechanism produces the outputs of the system.

Outputs from nonregular forces may be as familiar as sabotage, terrorist activities, public demonstrations, and small-scale military attacks. Less obvious outputs include administrative and governmental jurisdiction functions such as village-aid projects, education, training, and formation of other organizational programs.³² Importantly, the Leites and Wolf framework reveals four methods to counter the advance of the insurgent system. It is possible to influence each of these methods, to some degree, by the use of airpower.

C. COUNTERS BASED ON THE LEITES AND WOLF FRAMEWORK

The first method reduces available resources by controlling the amount and cost of acquiring both exogenous and endogenous inputs. Controlling this logistical aspect ostensibly should reside with police or ground forces, but the interdiction capability of airpower may prove appropriate for input denial.

The second reduces the efficiency of the production processes. Training camps for regular or nonregular forces—traditional static targets—obviously represent a potential target for airpower. Many other targets in small wars, however, are not suitable for “attack” via conventional weapons and crosshairs. Examples of nonlethal production denial operations include psychological operations (PSYOPS), defoliation, and harassing fires.

The traditional counterforce role of military action, Leites and Wolf’s third method of countering the system, targets opposing forces directly. “This is the traditional military task; it is best understood, most familiar, and most typically preferred by the military.”³³ As such, it is the method most seemingly apropos for airpower. Again, however, it does not necessarily require tritonal or depleted uranium. Instead, indirect

³¹ David Willard Parsons, “Towards the Proper Application of Air Power in Low-Intensity Conflict” (master’s thesis, Naval Postgraduate School, 1993), 63.

³² Leites and Wolf, *Rebellion and Authority*, 34.

³³ Leites and Wolf, *Rebellion and Authority*, 81.

means of reducing nonregular forces will likely become more important in small wars than in larger ones.³⁴ Indirect counterforce means such as surveillance, reconnaissance, and intelligence fall into such a category.

Finally, Leites and Wolf's fourth method involves increasing the capacity to absorb the actions of opposing forces. This includes passive measures such as population evacuation and relocation as well as active defense measures. Perhaps even more than in the direct counterforce role, airpower can prove most beneficial in the active defense role. Leites and Wolf explain:

This active defensive role may be enhanced, in addition, through aerial patrols that maintain round-the-clock surveillance and can apply a heavy concentration of ready firepower in the event of a guerrilla attack. Small aircraft with long loiter times and enough weaponry to counter a light or moderately heavy guerrilla attack effectively may be an important component in this type of active defense system. The main purpose of such an aerial police would be to provide both the symbol and the reality of [the authority's] presence and protection.³⁵

The Leites and Wolf model of insurgency provides a general framework for understanding the nature of small wars. The system presented here forms the “engine” that drives production of the organization's outputs.

Leites and Wolf's primary aim was “generalization and theory—to develop and illustrate a way of analyzing insurgent conflicts—rather than application of the analytical method to actual conflicts.”³⁶ The following three chapters attempt to do just that. They will apply the analytical method within the context of historical examples of small wars in which airpower played an important, albeit oftentimes supporting, role in the overall success of the campaign.

³⁴ Leites and Wolf, *Rebellion and Authority*, 82

³⁵ Leites and Wolf, *Rebellion and Authority*, 83.

³⁶ Leites and Wolf, *Rebellion and Authority*, 34.

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III. SMALL WARS OF THE BRITISH

A. INTRODUCTION

Perhaps the one country to most often utilize airpower in a small war environment is Great Britain. Air control as a means of coercive power was utilized extensively by the British during the period between the world wars as an expedient and low cost means to control the vast British colonial empire.³⁷ The British dealt with colonial disorders as a military issue, with little regard for the social, economic, or political aspirations of the indigenous colonial populations.³⁸

These colonial requirements did not decrease following World War II even as the strength of the British military decreased significantly.³⁹ What did change was the realization of the validity of air control doctrine and the preeminence of airpower in small wars. As one Royal Air Force (RAF) group captain in 1946 contended, “Since the essence of occupation is the presence of troops in the territory, it is probable that the greatest contribution which the air force can make is to carry the Army around the country.”⁴⁰ Thus, following six brutal years of global war, the RAF, despite drastic reductions of men and equipment, suddenly had to adapt to a completely different form of warfare. The RAF’s first encounter with this new era of small wars was in the dense jungles of the Malay Peninsula.

³⁷ Much of the air control doctrine utilized by the British evolved from early results obtained by the use of aircraft to quell uprisings in British Somaliland in 1919-1920. In the wake of World War I the British faced imperial obligations such as League of Nations mandates to control colonial locales. At the same time the Royal Air Force (RAF), a newly-minted separate service, was fighting for institutional existence. Air Marshal Hugh Trenchard, RAF chief of staff, desired a mission that would justify the independence of the RAF. Trenchard proposed that the RAF take the lead in conducting military operations in Britain’s most troublesome new mandate—the former Ottoman provinces of Mesopotamia. See James S. Corum, “The Myth of Air Control,” *Aerospace Power Journal* 14, no. 4 (Winter 2000).

³⁸ Corum and Johnson, *Airpower in Small Wars*, 180.

³⁹ By the start of the Malayan Emergency, the number of RAF personnel had plummeted from a World War II level of 125,000 in Air Command Southeast Asia to fewer than 9,000 in all of Air Command Far East. There were similarly dramatic reductions in hardware: from over 1,300 aircraft down to around 100. See Corum and Johnson, *Airpower in Small Wars*, 179.

⁴⁰ Group Captain G.G. Barnett, “The Role of the Royal Air Force in the Preservation of Peace,” *RUSI* (February-November 1946), 77.

B. THE MALAYAN EMERGENCY

1. Background

Great Britain waged the Malayan Emergency from 1948-1960 in response to an uprising by the Malayan Communist Party (MCP). After initial setbacks, the British implemented a vast array of civil and military programs tied together in an overall strategic plan. Critical to success was the Briggs Plan—a massive undertaking to separate the MCP guerrillas from the population by the resettlement of 400-500,000 Chinese squatters into “new villages.”⁴¹ Despite strong advances early in their effort, the MCP lost the momentum under the pressure of the Briggs Plan and never regained it.

The British experience in Malaya stands as a modern example of a successful counterinsurgency effort in a small war. This is certainly not to say the British solution is the singular answer to addressing the complex milieu that makes up counterinsurgencies in small wars. It does, however, provide a distinctive insight into the possible imaginative uses of a small but flexible air component to support the larger political-military effort.⁴²

2. Environment

The Malay Peninsula spanned over 50,000 square miles—roughly the size of the state of Florida. Two-thirds of this territory was engulfed by triple canopy jungle. The Royal Air Force (RAF) operated from six major airfields with only one suitable for supporting medium bombers. The RAF aircraft represented a mix of World War II-vintage propeller driven aircraft such as Spitfires and Lincoln bombers, modern jet aircraft such as de Havilland Vampires and Canberra jet bombers, rotary wing aircraft, and light and medium transport aircraft. Despite the vast array of types, there were never more than fifteen RAF squadrons in Malaya at one time.⁴³

Demographically, approximately 4.9 million people lived in Malaya. Of these, only 2.1 million people were Malays. Ethnic Chinese comprised 1.9 million people and just over 500,000 were of Indian descent.⁴⁴ Perhaps the most salient divide of the time

⁴¹ R. W. Komer, *The Malayan Emergency in Retrospect: Organization of a Successful Counterinsurgency Effort* (Santa Monica, CA: Rand, 1972), 19.

⁴² Komer, *The Malayan Emergency*, 52.

⁴³ Corum and Johnson, *Airpower in Small Wars*, 193.

⁴⁴ Brozenick, *Small Wars*, 74.

was ethnic. As author Larry Cable suggests, the insurgency was “confined to the Chinese residents of Malaya, a minority of the population which was easily separated from the ethnic Malays who constituted the majority.”⁴⁵

3. Opposition Strategy

The opposition in the Malayan Emergency employed a classic Maoist insurgent strategy in its bid to overthrow government forces. The desired end state was the installation of a Marxist regime. This strategy was to be executed in three phases. During the *pre-hostilities phase*, the MCP attempted to develop a cadre and infrastructure primarily through political confrontation. The second or *guerrilla warfare phase* aimed to extend political control throughout the countryside to strangle the economy and link liberated rural areas. Finally, victory was to come from a *conventional warfare phase*.⁴⁶

4. Popular and External Support

A distinguishing aspect of the Malayan Emergency was that not a single external actor provided any substantial support to the MPC. The Chinese Red Army was waging a revolutionary war against the Kuomintang forces, and the Soviet Union was strengthening its grip on Eastern Europe. Malaya itself and its people were the only sources of support for the MPC. Thus, the once-partisan movement was now forced to operate as an insurgent organization.⁴⁷ Popular support for logistics, personnel, and intelligence was primarily derived from Chinese squatters living near the jungle fringe.

5. Framework for Analysis

a. Input Denial

Many factors within the Malayan Emergency reduced the ability of the RAF to conduct Leites and Wolf’s first method of limiting insurgent progress: input-denial. Adverse weather, terrain, and the dense foliage of the Malay Peninsula limited the effectiveness of airpower in the classic interdiction role. The most limiting factor for interdiction, however, was the fleeting nature of the MCP guerrillas, if they could be found at all. Perhaps the most vivid example of this comes from the futile attempts to interdict the Tens Fook Loong and Number 3 Independent Platoon. Despite accurate

⁴⁵ Larry Cable, *Conflict of Myths: The Development of American Counterinsurgency Doctrine and the Vietnam War* (New York: New York University Press, 1986), 71.

⁴⁶ Brozenick, *Small Wars*, 91.

⁴⁷ Cable, *Conflict of Myths*, 73; Brozenick, *Small Wars*, 92.

intelligence of the enemy's location, the RAF dropped over 709,000 pounds of ordnance over the course of multiple missions in 1956. The end result was only four enemy casualties.⁴⁸

b. Countering the Production Process

Attacking the production process, Leites and Wolf's second method, was more effective than interdiction. Airpower's chief contribution in this regard was defoliation during the massive food denial campaign of the Briggs Plan. Even without actively aerial spraying, airpower contributed to the food denial efforts by observing clearings in the jungle that were tell-tale signs of guerrilla cultivation sites.

Psychological operations, another counter to the production process, was "one of the most useful weapons" employed during the Emergency and included leafletting as well as voice recordings broadcast from airplanes.⁴⁹ Upwards of 70 percent of surrendering MCP guerrillas claimed that these "voice flights" had some role in shaping their decision.⁵⁰

A tertiary success in affecting the production process was generated through what essentially amounted to harassing fires. These harassing fires, however, came at the expense of the traditional counterforce method of airpower, Leites and Wolf's third component. The evidence suggests that "air strikes were responsible for less than 10 percent of all enemy dead. . . . But air attacks did keep the enemy moving and unsettled and increased the number of successful contacts with ground forces." General Briggs stated that "offensive air support plays a very vital role in the main object of the Security Forces, namely the destruction of bandit morale and the increasing of the morale of the civil population."⁵¹

c. Counterforce

While the *direct* means of counterforce operations through airpower met with limited success in Malaya, counterforce through indirect means proved critical.

⁴⁸ Jay Gordon Simpson, "Not by Bombs Alone: Lessons from Malaya," *Joint Forces Quarterly* (Summer 1999), 95.

⁴⁹ Between 1955 and 1957, approximately 50,000 leaflets were delivered for every insurgent in the field. See Malcolm Postgate, *Operation Firedog: Air Support in the Malayan Emergency 1948-1960* (London: Ministry of Defense Air Historical Branch (RAF), 1992), 152.

⁵⁰ Komer, *The Malayan Emergency*, 75.

⁵¹ Komer, *The Malayan Emergency*, 95.

Aerial reconnaissance also was effective, finding “155 confirmed and 77 possible guerrilla camps as well as 313 cultivated sites, 31 recultivations, 194 clearings of probably terrorist origin, and 21 [friendly] farms under enemy control over a six-month period in 1955.”⁵² Reconnaissance missions flown by the RAF also critically aided British ground forces. Early air and ground operations were hobbled by inaccurate or an absolute lack of maps of Malaya. RAF aerial reconnaissance missions rectified this problem by photographing the entire peninsula.⁵³

d. Active Defense

The fourth and final method of countering insurgents involved active defense measures. Leites and Wolf’s idea of “extending the presence and protection” of an aerial police was arguably airpower’s most instrumental offering in Malaya. Dr. James S. Corum and Col. Wray R. Johnson explain that “by extending the presence and protection of the government to remote areas, the military quickly made the Malayan countryside an inhospitable place for the [enemy]. It was in support of this effort, rather than by direct offensive action, that the RAF proved invaluable.”⁵⁴ The aerial police force in Malaya manifested itself not only in Leites and Wolf’s vision of a small attack plane, but in the ubiquitous tactical light and medium cargo aircraft of the air transport units. With supporting roles played by aircraft involved in transport, supply drops, medical evacuations, and even command and control, air supply proved indispensable.⁵⁵

Airpower played a vital but supporting role in the overall success of the British in the Malayan Emergency. Key to this success was the imaginative and often times unorthodox operational and tactical application of airpower to support the political and military aims of the overall strategy. Thus, “the order of importance of RAF operations overall was generally assessed to be air supply and transport, photoreconnaissance, close air support, long-range strikes against targets beyond the reach of units on the ground, and communications.”⁵⁶ While airpower played a supporting effort during Malaya, it was to prove vital in a future British small war.

⁵² Simpon, “Not by Bombs Alone,” 97.

⁵³ Brozenick, *Small Wars*, 111.

⁵⁴ Corum and Johnson, *Airpower in Small Wars*, 191.

⁵⁵ Komer, *The Malayan Emergency*, 52.

⁵⁶ Corum and Johnson, *Airpower in Small Wars*, 195.

C. THE FALKLAND ISLANDS

1. Background

Twenty-two years after the end of the Malayan Emergency, the British found themselves fighting yet another small war. This time the British military was pitted against conventional armed forces—the regular Argentine army, navy, and air force in a battle for the Falkland Islands in the South Atlantic. As one historian described the conflict, “The struggle for the Falklands was essentially a small colonial war midway in kind between a counter-insurgency [sic] operation and the amoured warfare seen in Europe in 1944-45.”⁵⁷

On 2 April 1982, in an act of unprovoked aggression against British sovereign territory and British citizens, Argentine forces invaded the Falkland Islands.⁵⁸ The British declared a 200-mile naval blockade around the Falkland Islands. Within days the military machines of both countries were literally on a collision course at a rate of 18 knots as the British fleet steamed southward.⁵⁹ The staunch nationalism of each side and the resulting lack of compromise turned out to be the major reason for the failure of diplomatic efforts. These national positions were a result of the political and social unrest in Argentina and of the political and social principles of Great Britain.

2. Environment

Another element that strengthened the justification for confrontation was the limited territorial scope of the crisis. The Falkland Islands, known as Islas Malvinas in Argentina, comprise a small archipelago situated 300 miles east of the Strait of Magellan. With a population of less than 3,000 people, the Falkland Islands are mostly wind-swept grasslands approximately the size of Connecticut. This small footprint contained the confrontation and afforded a low risk for expansion with limited impact on non-combatants. As one historian indicates:

The very simplicity of the issue created its own difficulties, for it was not possible to draw on a range of interlocking issues to produce a series of

⁵⁷ Max Hastings and Simon Jenkins, *The Battle for the Falklands* (New York: W.W. Norton & Company, 1983), 316.

⁵⁸ Duncan Anderson, *Essential Histories: The Falklands War 1982* (Oxford: Osprey Publishing, 2002), 5.

⁵⁹ A. M. Haig, *Caveat: Realism, Reagan, and Foreign Policy* (New York: Macmillan Publishing Company), 265.

complex trade-offs. Basic principles of sovereignty and self-determination were at stake and these do not leave a lot of room for compromise, especially with the addition of prestige.⁶⁰

3. Opposition Strategy

Argentinean forces employed what Bard O'Neill refers to as the military-focus strategy "it gives primacy to military action and subordinates political action" and, fully aware of the value of popular support, the opposition makes "no systematic, sustained effort to acquire it through extensive political organizing efforts . . . instead, proponents of the military focus believe that popular support either is already sufficient or will be a by-product of military victories."⁶¹

To counter this military-focus strategy, the British utilized an almost wholly-conventional response. The RAF and Royal Navy deployed 14 Harrier GR3s and 28 Sea Harriers, respectively. These aircraft eventually tallied a combined total of 1561 combat sorties. Aging Vulcan bombers flew five attack sorties. These missions were supported by 375 Victor Tanker, 111 Nimrod and more than 600 Hercules and VC10 sorties.⁶² Additionally, almost 200 helicopters of seven different types flew countless missions, ranging from strategic lift to reconnaissance, often while flying at over three times the peacetime schedule.⁶³

4. Popular and External Support

The unrest that inspired the Junta to galvanize support was a consequence of its loss of power since seizing control of the country in 1976. The Argentinean economy had decayed amidst mounting unemployment and inflation which rose at an annual rate of 150 percent.⁶⁴ Economic pressures combined with increasingly unpopular acts of repression, murder, and torture reached a climax in early 1982. The Junta used the

⁶⁰ L. Freedman, L and V. Gamba-Stonehouse, *Signals of War: The Falklands Conflict of 1982* (New Jersey: Princeton, NJ: University Press, 1991), 239-240.

⁶¹ O'Neill, *Insurgency & Terrorism*, 56.

⁶² Martin Spirit and James Paul, "The Air War." *Britain's Small Wars*, 2002, <http://www.britains-smallwars.com/Falklands/air-war.htm> (accessed November 2005), 2.

⁶³ *The Falklands Campaign: The Lessons* (London: Her Majesty's Stationery Office, 1983), 20.

⁶⁴ K. Watman and D. Wilkening, *U.S. Regional Deterrence Strategies* (Santa Monica, CA: Rand, 1995), 38.

seizing of “the Falklands as a means of reasserting its legitimacy through demonstration of military competence.”⁶⁵

A domestic impetus to the invasion was not limited to the Junta. British Prime Minister Margaret Thatcher faced her own internal discord prior to the Falkland situation. In the post World War II era Great Britain’s once dominant empire began to decline. The aggressive behavior of Argentina rekindled a sense of nationalism within Great Britain.⁶⁶ This nationalism, however, had little to do with colonial desires. Indeed, Britain was willing to decolonize the Falklands. She was, however, not willing to simply hand them over for recolonization under the Argentinean flag.⁶⁷

Thus, the groundwork for a politically motivated but territorially-based and confined small war was established, one that has to be considered unique based on the conventional disposition of the belligerents and the relative high importance of airpower.⁶⁸

5. Framework for Analysis

a. Input Denial

Similar to Malaya, many factors contributed to the British inability to conduct Leites and Wolf’s first method for decreasing the opposition’s advance: input-denial. Instead of adverse weather and terrain, the sheer distance to the combatant area was the limiting factor. “Of all the factors disturbing British commanders throughout the war, it was the awesome distance between the theater of operation and the home base that remained the most potent. Any form of disaster—damaged ships, stranded men, lost aircraft—would take place more than 3,000 miles from any secure source of support.”⁶⁹ On 30 April-1 May, 1982, however, one Vulcan bomber from 101 Squadron, Strike

⁶⁵ Watman, *U.S. Regional Deterrence Strategies*, 39.

⁶⁶ T. Glaser, “The Falklands: Failure of a Mission.” *Conflict Research Consortium*. 1998, <http://www.colorado.edu/conflict/peace/example/wynd7306.htm> (accessed October 2005).

⁶⁷ Haig, *Caveat*, 268.

⁶⁸ Martin Van Creveld refers to the Falklands War as a conventional war. He defines conventional wars as “armed conflicts openly waged by one state against another by means of their regular armies.” He does later refer to the limiting aspects that define small wars: the war “was waged in such a remote region, and over such an unimportant issue, as to make many people wonder why it had to be conducted at all.” See Martin Van Creveld, “Modern Conventional Warfare: An Overview” 2000, http://www.cia.gov/nic/PDF_GIF_2020_Support/2004_05_25_papers/modern_warfare.doc (accessed June 2005).

⁶⁹ Hastings, *The Battle for the Falklands*, 119.

Command, flew the first of five “Black Buck” raids against Argentinean forces. The bomber dropped twenty-one 1,000 pound bombs on the runway of Port Stanley during a 15 hour and 45 minute sortie in which the bomber was refueled 17 times.⁷⁰ While never being totally confident of closing the runway, the RAF thought it could render the runway unserviceable for high performance jets.⁷¹ More importantly, these attacks had a “significant effect of causing the Argentine government to hold its only radar-equipped fighters on homeland alert in case of heavy British bomber strikes against the mainland.”⁷² Additional static targets such as the airfield on Pebble Island and fixed Argentine troop installations also provided a few, albeit limited, limited interdiction targets for British airpower.

b. Countering the Production Process

Attacking the production process, Leites and Wolf’s second method, was certainly less effective compared to basic interdiction, which is not to say that harassing fires from airpower did not have some tangential effects. As one Argentinean conscript recounted, “They [British forces] would bomb us every night. They would start working their way down, and when they reached the end of our sector they would go back to the front and start again. The whole world would seem to be coming on top of you. There was a feeling of impotence, as if you were just waiting for death.”⁷³ While short duration attacks from bombs and shells normally shake a soldier from lassitude, the sustained harassment of the fixed Argentine front-line conscript tended instead to reinforce this characteristic.⁷⁴

c. Counterforce

The third area of analysis, counterforce operations, was paramount during the Falklands Island Campaign. Counterforce operations were especially critical in the air. From the start, the British established three air patrol positions: one north of the

⁷⁰ The Black Buck attacks marked the first and only time Vulcan bombers dropped ordnance in combat. The Vulcans were retired from the RAF immediately afterwards. Anderson, *Essential Histories*, 32.

⁷¹ Anderson, *Essential Histories*, 32.

⁷² Christopher J. Bowie, *Coping with the Unexpected: Great Britain and the War in the South Atlantic*. (Santa Monica, CA: Rand, 1985), 13.

⁷³ Anderson, *Essential Histories*, 70.

⁷⁴ *The Falklands Campaign: The Lessons*, 70.

islands; a second over West Falkland; a third over the southern end of Falkland Sound.⁷⁵ From these vantage points, British Sea Harriers downed 18 Argentinean fighters.

Unlike Malaya, however, the indirect means of counterforce operations were negligible. Psychological operations and aerial reconnaissance were limited by the extreme distances covered by the British forces and the lack of equipment available in the South Atlantic. Also, the British military after action analysis of the Campaign determined that based on the short duration of the conflict the “absence of a dedicated overland air reconnaissance capability was a handicap in the Campaign, and the resulting lack of precise information on enemy dispositions presented an additional hazard to ground forces.”⁷⁶

d. Active Defense

Again, the fourth and final method of countering the system involves active defense via airpower. Leites and Wolf’s idea of a “small aircraft with long loiter times and enough weaponry to counter a light or moderately heavy” attack played a major role in the Falklands. The Sea Harrier typified the aerial police force in Falklands by providing “presence and protection” for the British forces. Researcher Max Hastings contends that beyond the actual number of enemy aircraft they shot down, the “Harriers made an enormous contribution by breaking up and turning back enemy attacks before they had been pressed home.”⁷⁷ Additionally, transport, supply drops, and air supply proved vital to the British involvement.

D. ANALYSIS

Thus, in contrast to what was seen in the Malayan Emergency, airpower proved to be key to British success during the Falklands Campaign. The critical roles of airpower, as can be expected, were almost the inverse of those in Malaya. In terms of importance to the overall operation, these roles were: air defense, air supply and transport, close air support, long-range strikes, reconnaissance, and communication. Clearly then, these two diverse cases represent the far ends of the small war continuum. By analyzing them, the primary lessons for airpower in small wars can be established.

⁷⁵ Hastings, *The Battle for the Falklands*, 206.

⁷⁶ *The Falklands Campaign: The Lessons*, 24.

⁷⁷ Hastings, *The Battle for the Falklands*, 228.

IV. SMALL WARS OF THE FRENCH

A. INTRODUCTION

While Great Britain was struggling with the insurgency in Malaya, French armed forces were fighting small wars in Indochina and Algeria. In both these cases, the opposition forces proved to be larger and more powerful than the insurgency encountered by the British. Additionally, the French forces in both Indochina and Algeria faced opponents who were ethnically similar to the indigenous populations, and who enjoyed the sanctuary and security of an exogenous supporting nation with a shared border.

Not surprisingly, French air power played a much different role in these conflicts than British airpower in Malaya and the Falklands. Despite difficulties finding and identifying guerrillas in the jungles of Indochina, French airpower—both combat and logistical—often proved the salvation of isolated ground forces. In the vast reaches of Algeria, aerial and airmobile forces were often the most effective means of rapidly hunting down and breaking up guerrilla groups.⁷⁸ Finally, while the British proved victorious in Malaya and later the Falklands as well, the insurgent forces defeated the French in both Indochina and Algeria.

B. THE FIRST INDOCHINA WAR (1946-1954)

1. Background

France waged The First Indochina War from 1946 through 1954 in an attempt to regain control of colonial possessions in Southeast Asia that were partially lost during World War II. Japanese forces occupied what is modern-day Vietnam beginning in September 1940. This territory, along with the present-day countries of Cambodia and Laos, comprised Indochina which was a French colony since the second half of the nineteenth century.⁷⁹ During the Japanese occupation Ho Chi Minh formed the Vietnamese Communist Party and established national elements to oppose the Japanese forces. These elements eventually became known as the Viet Minh.

⁷⁸ Philip Anthony Towle, *Pilots and Rebels: The Use of Aircraft in Unconventional Warfare 1918-1989* (London: Brassey's, 1989), 106.

⁷⁹ H. John LeVan, "Vietnam: Revolution of Postcolonial Consolidation," in *Revolutions of the Late Twentieth Century*. Edited by Jack A. Goldstone, Ted Robert Gurr, and Farrokh Moshiri (Boulder, CO: Westview Press, 1991), 52.

Following World War II, the French returned to Indochina and reestablished pro-French monarchies in Cambodia and Laos and attempted to reestablish a similar monarchy in Vietnam that would rule under a French protectorate. Ho Chi Minh traveled to Paris to negotiate a diplomatic solution, but the situation deteriorated rapidly and by November 1946 severe fighting broke out between French forces and the Viet Minh.⁸⁰

2. Environment

French Indochina consisted of a land mass that spanned around 285,000 square miles. Half of this territory was dense jungle. Only 20 percent of the area, mostly deltas and open plains, was void of vegetation. Indochina sweltered under a hot monsoon climate, with torrential rains lasting from the end of May until the beginning of October. Mountains reaching above ten thousand feet in places formed a topographic division through the middle of Indochina. These same mountains today form the border that modern-day Vietnam shares with Laos and Cambodia.

Demographically, the region contained 30 million people with half of them living in what was later called North Vietnam, the location of most of the fighting against the French. Of these inhabitants, 29 million were confined to only 20 percent of the land. More importantly, the inhabitants were essentially ethnically and culturally homogenous. Minority ethnic groups comprised only 15 percent of the total population and were mostly Chinese and Cambodians, along with several “hill tribes.”⁸¹

3. Opposition Strategy

As the war in Indochina unfolded, the French controlled major cities and their enclaves while the Viet Minh controlled the countryside.⁸² Initial attacks by the Viet Minh were often on a larger scale than typical guerrilla engagements. As former director of U.S. intelligence, William Bundy, stated in an official memorandum, “The Viet Minh had developed elaborate logistic lines and extensive supplies which permitted them to

⁸⁰ Corum and Johnson, *Airpower in Small Wars*, 143-146.

⁸¹ Corum and Johnson, *Airpower in Small Wars*, 228. The inhabitants of Indochina have a long history of guerrilla uprising dating back to 40 A.D. Chinese and Thai occupiers of the region were the primary protagonists of these hostilities. The French did not assume colonial control of the region until 1863, with the Tongking area (roughly the area of North Vietnam) becoming a French protectorate in 1884. By that point, the inhabitants of the region had established quite a heritage of guerrilla warfare. See Edgar O’Balance, *The Indo-China War 1945-1954: A Study in Guerilla Warfare* (London: Faber and Faber, 1964).

⁸² Corum and Johnson, *Airpower in Small Wars*, 146.

conduct protracted large-scale attack operations even though their tactical concepts remained oriented basically toward guerrilla rather than conventional or positional warfare.”⁸³

General Vo Nguyen Giap, the military commander of the Viet Minh, escalated his forces from guerrilla to offensive operations in 1950. After initial victories over French frontier outposts, Giap suffered a tremendous defeat when he attacked the city of Vinh-Yen.⁸⁴ Following this unsuccessful offensive, Giap returned to protracted guerrilla attacks and attrition warfare.

Based on these victories, the French Commander-in-Chief in Indochina believed that the war could be won by decisive set-piece battles of attrition. This belief became known as the “illusion of Vinh-Yen.” Further victories at Na-San airfield in 1953 furthered this notion of big-battles supplied, reinforced, and supported by air transport alone. Unfortunately, these misunderstandings directly led to the final defeat of the French in Indochina at the battle for Dien Bien Phu.⁸⁵

4. Popular and External Support

The Viet Minh enjoyed an increasing allegiance from many of the Vietnamese people, especially those in the Tonkin region. Many went beyond tacit support and formed regional and local guerrilla units inside the French enclaves. These guerrilla forces constantly raided French outposts and tied down considerable numbers of forces in fortifications and rear security.

The Viet Minh lacked external support entirely during this initial guerrilla phase. This, however, changed dramatically on October 1, 1949, when Chinese Communist Party Chairman Mao Tse-tung claimed a victory over the Kuomintang and instated the People’s Republic of China (PRC). Within days the United States Congress passed the Mutual Defense Assistance Program to finance the efforts of non-communist countries

⁸³ Krepenevich, *The Army in Vietnam* (Baltimore: Johns Hopkins University Press, 1986), 161.

⁸⁴ The Viet Minh lost six thousand dead and five hundred prisoners in the battle for Vinh-Yen. Air support was critical to the French success. On 17 January 1951, for example, *every* French fighter-bomber in Indochina as well as all transport aircraft capable of dropping bombs were diverted to the battle. These aircraft, using “on the deck” strafing, caused most of the casualties at Vinh-Yen. See Corum and Johnson, *Airpower in Small Wars*, 155; and Robert H. Scales, Jr., *Firepower in Limited War* (Washington, D.C.: National Defense University Press, 1990), 49.

⁸⁵ Scales, *Firepower*, 51-54.

such as France. The American commitment to the French-Indochina war followed almost immediately.⁸⁶ The Viet Minh also enjoyed a sanctuary across the border in southern China. PRC forces also helped train the Viet Minh from within this sanctuary. Perhaps most significant for General Giap and his forces was the inundation of artillery and anti-aircraft weapons. The latter would have a dramatic impact on reducing the effectiveness of French airpower.⁸⁷

5. Framework for Analysis

Before analyzing the impact of French airpower on the Indochina War it is necessary to place it in its proper context. Bernard Fall, famed author of *Street Without Joy*, a classic study of the First Indochina War, explains:

If much of the Indochina war was fought on a thin shoestring, the air war was fought on one that was also badly frayed and had to be held together by knots at several places. In 1946, the French Expeditionary Corps fielded sixty British Spitfires whose wood and canvas components literally rotted off the aircraft in mid-flight. . . . The backbone of the transport and bomber force was made up of German Junkers-52 tri-motor planes assembled from booty stocks found in Germany. In many cases the same planes fulfilled transport and bombing missions, with the “bombardiers” simply lobbing bombs and napalm canisters out of the plane’s side doors.⁸⁸

French aircraft from both the navy and air force continued to improve and eventually included American-made aircraft. The French also operated at least one aircraft carrier in the Gulf of Tonkin for the duration of the war.⁸⁹

⁸⁶ Melanie Billings-Yun, *Decision Against War: Eisenhower and Dien Bien Phu, 1954* (Columbia University Press, New York, 1988), 4. Researcher Andrew Krepinevich agrees and suggests that the defeat of the Nationalist Chinese and the initiation of the war in Korea by Communist forces in June 1950 shed a new light on the French struggle against the Viet Minh. In fact, less than a month after the Communist invasion of South Korea, the U.S. Joint Chiefs of Staff determined that Indochina was the key to Southeast Asia. See Andrew Krepenevich, *The Army in Vietnam* (Baltimore: Johns Hopkins University Press, 1986), 18.

⁸⁷ Corum and Johnson, *Airpower in Small Wars*, 151.

⁸⁸ Bernard B. Fall, *Street Without Joy: Insurgency in Indochina, 1946-63*, 3rd ed., (Harrisburg, PA: Stackpole, 1963), 256-257.

⁸⁹ In a unique command and control structure all airpower, to include naval aviation, was placed under the control of the Commander-in-Chief. This structure helped alleviated inter-service doctrinal disputes and the presence of multiple air arms. See Scales, *Firepower*, 41.

a. Input-Denial

A deficit of the “shoestring” air war was the inability to wage an input-denial campaign. This was exacerbated by shortfalls of aircraft and intelligence. A prime example of this is that the French navy possessed the only aircraft in Indochina with long-range bombardment capability and these amounted to only six aging bombers.⁹⁰ In contrast, Viet Minh inputs flourished. Leading up to Dien Bien Phu, supply lines consisted of 300,000 soldiers and peasants moving artillery, anti-aircraft guns, and other materiel along a 500-mile trek.⁹¹ General Vo Nguyen Giap himself best describes such an impossible interdiction target:

At night, the cloud-covered mountains and forests of the northwest became a hive of activity. Trucks hauling artillery plus transport vehicles rolled by in long motorized convoys. The convoys of human beings seemed endless. . . The bicycle convoys looked like a herd of little elephants. . . The highlanders, dressed in their colorful costumes, carried baskets of rice on their backs or led pack-animals along. A logistics officer was even escorting a herd of pigs. All were moving in one direction.⁹²

Another input-denial method utilized by the French that depended on airpower was the robust employment of airborne forces. As one of their primary lessons learned, the French realized that the war “emphasized the importance of strategic mobility based upon air transport in areas devoid of land communications; it also proved that tactical mobility was just as necessary without making this requirement synonymous with motorization.”⁹³ Unfortunately, a shortage of airlift, especially tactical airlift, often

⁹⁰ Bernard B. Fall, *Hell in a Very Small Place: the Siege of Dien Bien Phu* (Philadelphia, PA: J.B. Lippincott Company, 1967), 131.

⁹¹ Rebecca Grant, “Dien Bien Phu,” *Air Force Magazine*, August 2004, 80.

⁹² General Vo Nguyen Giap, *Dien Bien Phu: The Most Difficult Decision and Other Writings* (Hanoi: The GIOI Publishers, 1992), 29-30. Interestingly, Giap’s writings do not recall significant impact from aerial activities of the French. As more of an indifferent aside he recounts, “Enemy planes struck repeatedly at important sections of road, mostly on the high passes and at river crossings. The Lung Lo Pass and Ta Khoa and Co Noi river crossings, a meeting point of two roads from Hoa Binh and Yen Bai in the northwest, became huge bomb craters. Flares were dropped throughout the night onto key locations.” Giap was clearly more influenced by the activities of mobile ground forces and the fixed defenses at Dien Bien Phu.

⁹³ Victor J. Croizat, *A Translation From the French: Lessons of the War in Indochina Volume 2* (Santa Monica, CA: Rand, 1987), 155.

imposed a severe limit on the material these airborne forces could carry.⁹⁴ These same shortages also had a significant impact on Leites and Wolf's second method, countering the production process.

b. Countering the Production Process

Instead of ranging out and disrupting the production process of the Viet Minh, the French spent a sizeable effort securing their own positions.⁹⁵ By the end of the war, over 80,000 troops were held immobilized behind the security of the wire of 920 outposts and forts. Half of all French infantry were used for guard duties.⁹⁶ As author Bard O'Neill describes, "The French in Indochina mistakenly tried to defend all lines of communication and, thus, ended up with a large, static defense force."⁹⁷ The significant effort of airpower resources needed to supply and help protect these static forts came at the expense of affecting the enemy hidden in the jungle.

Perhaps the most successful method employed to undermine the Viet Minh's sense of security was the use of French-led guerrilla forces. By 1953 between fifteen and twenty thousand indigenous forces were fighting against the Viet Minh in the Tongking region. At one point, these French-led guerrillas had tied up fourteen Viet Minh battalions. Airpower played a significant role in this effort: the whole operation was supported by air to include three hundred tons of supplies airlifted each month.⁹⁸

c. Counterforce

French airpower also had mixed results on Leites and Wolf's third method: counterforce operations. The battles of Vinh-Yen and Na-San demonstrated the exceptional kinetic effectiveness of airpower given ideal circumstances. Unfortunately,

⁹⁴ Scales, *Firepower*, 40. Interestingly, the use of French helicopters was quite parsimonious. By 1950, only two helicopters were involved in the war effort and they were devoted to the medical service. In 1952 there were still only 10 in use. The French eventually made plans for 100 helicopters complete with training and basing by 1954 but were cut short by the end of the war. See Croizat, *A Translation From the French*, 299.

⁹⁵ Leites and Wolf, *Rebellion and Authority*, 79-80. The authors cite several means that airpower can adversely affect the enemy's production process to include: reducing enemy productivity, targeting the production mechanism directly (such as crop destruction), forcing more resources towards defense and survival, and finally influencing enemy defection. The authors suggest that large-scale B-52 attacks on Viet Cong areas often had such an effect on the enemy's production process.

⁹⁶ Scales, *Firepower*, 35.

⁹⁷ O'Neill, *Insurgency & Terrorism*, 162.

⁹⁸ Towle, *Pilots and Rebels*, 111.

the French commanders misconstrued the lessons following these battles and placed exaggerated faith in the killing effect of fire support from airpower. As military historian Robert Scales contends, the French commanders then “sought to lure the Viet Minh into attacking well-prepared positions—to create a series of small Verduns intended to let the enemy ‘bleed himself white’ in the face of French firepower.”⁹⁹ Giap, however, also learned from these battles and returned to guerrilla tactics, seeking to lure the French further away from their bases and reducing the French firepower advantage.

This return to guerrilla warfare also hurt the indirect counterforce operation of airpower. One of the primary missions of L’Armée de l’air was aerial reconnaissance. French air reconnaissance units, however, were singularly ineffective. It was not until 1951 that the French air force had a formal reconnaissance unit in place. Even by the end of the war the French had not improved at spotting Viet Minh movements.¹⁰⁰ One of the primary aircraft utilized for reconnaissance operations throughout the war was the light Morane Saulnier 500, essentially a French version of the German Feiseler “Storch” of World War II. What the aircraft lacked as a jungle reconnaissance platform, it more than made up for in active defense.

d. Active Defense

To meet the criteria of Leites and Wolf’s fourth method, reducing the opposition’s actions, we would expect to see a light aircraft representative of an aerial police force. The Morane epitomized this description. Indeed, ground units with a friendly Morane overhead were rarely ambushed and ground commanders with no assigned aviation often “tried to retain control over the Moranes by having them fly in circles overhead just in case something might happen.”¹⁰¹ One mission the Moranes were physically incapable of was heavy transport.

⁹⁹ Scales, *Firepower*, 51.

¹⁰⁰ Corum and Johnson, *Airpower in Small Wars*, 150.

¹⁰¹ Croizat, *A Translation from the French*, 297; Scales, *Firepower*, 45. French light observation aircraft were utilized in a multiplicity of roles. These included “air spot for mortar and artillery fires, reconnaissance patrol, close support for ground forces, radio relay, air direction of Air Force fighter and bombardment aircraft, reconnaissance of drop zones, aerial supply of rations, mail, medical stores, air evacuation, etc., to which should be added command liaison, battlefield surveillance, and the armed reconnaissance missions flown at the beginning of the war when the observers would attack targets of opportunity with their automatic rifle.” See Croizat, *A Translation from the French*, 291.

This is unfortunate as heavy transport aircraft were at a premium in Indochina and not just to support airborne operations and resupply French-led guerrilla operations. Transport aircraft were to play the central role in a new strategy: establishing “air-land” fortresses that were to be supplied, reinforced, and supported by transports alone. The groundwork was laid for the defeat of the French at Dien Bien Phu.

e. Airpower during Dien Bien Phu

The seizing of Dien Bien Phu by the French was an attempt to repeat Na-San on a grand scale. Deep in Viet Minh territory, the small valley was 190 air miles from the primary French air bases in Hanoi. On 10 March 1954 the Viet Minh began a siege of the French emplacement and within four days had closed the runway. Air transports, now the vital link for the beleaguered French forces, were forced to air drop supplies. Newly acquired Viet Minh antiaircraft pieces unleashed deadly fire that forced the transports to deliver their loads from eighty-five hundred feet, instead of the usual two thousand.¹⁰² Close air support fighters, operating at the limits of their range and hampered by heavy monsoon rains and difficult terrain, were unable to quiet the Viet Minh artillery raining down on French forces. On 8 May, 55 days after the siege began, the surviving French troops surrendered to Giap and effectively ended French participation in the Indochina War.

Much has been written regarding the fall of Dien Bien Phu. As for the role of airpower during the siege as well as during the war, no one describes it more succinctly than the eminent Bernard Fall: “When everything has been said about the many major and minor errors which led to the French debacle at Dien Bien Phu. . . one single fact stands out above all others. *Air power on a more massive scale than was then available could not have changed the outcome of the Indochina War, but it would have saved Dien Bien Phu.*”¹⁰³

¹⁰² The aircraft losses at Dien Bien Phu were disproportionately large. In addition to the aircraft destroyed on the ground, 48 were shot down over the valley, 14 were destroyed while landing on the runway, and 167 were damaged from enemy fire. These are staggering numbers considering that there were only 450 aircraft in Indochina in 1954. See Fall, *Street Without Joy*, 256-262.

¹⁰³ Fall, *Hell in a very small place*, 455. An interesting aspect of the air war during Dien Bien Phu was the potential of American military involvement codenamed “Operation Vulture.” The potential operation called for upwards of 60 B-29 bombers and 150 fighters from U.S. Seventh Fleet carriers to strike Viet Minh positions surrounding the valley. There was even an escalatory option that included the use of three atomic weapons. See Billings-Yun for an excellent description of the political aspects and the Eisenhower administration’s deliberations. Also see Fall, *Hell in a Very Small Place*, 293-326.

C. ALGERIA

1. Background

A few short months after the fall of Dien Bien Phu, the French were surprised by another outbreak of rebellious violence, this time in what was largely considered the crown jewel of colonial France: Algeria. Algerian nationalists, known as the Front de Libération Nationale (FLN), sought nothing less than full independence. French forces capitalized on their experience in Indochina and soon had divided Algeria into small sectors and blanketed the country with French forces in a defensive technique known as the *quadrillage*. This measure was eventually supplemented by construction of strong barriers known as “barrages” along the Algerian borders with Tunisia and Morocco.¹⁰⁴

Exposed to French aerial surveillance and attack by mobile forces, units of the Algerian Army of National Liberation (ALN) were broken up and their operations reduced to smaller-scaled terrorist attacks. By 1959, French forces had essentially cut off ALN forces within Algeria and began successive massive offensives across the Algerian countryside. By 1960, the ALN, reduced to as few as 9,000 men scattered into small groups, had been effectively destroyed as a military force. However, unfortunately for the French the FLN eventually achieved on the political front what they were unable to achieve militarily: independence of Algeria from French rule.¹⁰⁵

2. Environment

Algeria is a large and difficult arena for military operations. Spanning roughly 8.5 million square miles, the region in 1954 was four times the size of France with 90 percent of the area comprised of desert. Some four thousand miles of land borders were indeterminate and disputed with few recognizable land marks. Strikingly, Algeria was

¹⁰⁴ The French learned much from the loss in Indochina. The defeat roused groups within the army to recognize that conventional fighting methods were often inadequate when fighting politically sophisticated enemies. This gave rise to the French doctrine of *guerre révolutionnaire* which was used extensively in Algeria. For an excellent analysis of *guerre révolutionnaire* see Peter Paret, *French Revolutionary Warfare from Indochina to Algeria: The Analysis of a Political and Military Doctrine* (New York: Frederick A. Praeger Publishers, 1964).

¹⁰⁵ Charles R. Shrader, *The First Helicopter War: Logistics and Mobility in Algeria, 1954-1962* (New York: Alfred A. Knopf, Inc, 1989), 227. From 1954 until 1962 the Algerian War claimed over 17,000 French dead and nearly 65,000 wounded (not to mention 141,000 FLN killed), but was denied by France to be a war, and was known simply as the “War with no Name.” This illusion persisted until 1999 when the French admitted that a state of war existed in the region. Unlike Colonial Indochina, Algeria at the time was considered part of Metropolitan France. See Martin S. Alexander and J.F.V. Keiger, “France and the Algerian War: Strategy, Operations and Diplomacy,” in *France and the Algerian War 1954-62*. Edited by Martin S. Alexander and J.F.V. Keiger (London: Frank Cass Publishers, 2002), 1-3.

compartmented into three major east-west zones by two chains of the Atlas Mountains. These zones also reflect differences in climatology ranging from a Mediterranean environment to the north to the harsh desert climate of the Sahara in the south. Temperatures and rainfall vary similarly with region, but precipitous changes in both are common.¹⁰⁶

Demographically, the population of Algeria in 1954 included nine million Arabs and around one million French settlers known in French as *colons*, and colloquially called *pied noirs* (black feet).¹⁰⁷ The *colons* comprised most of the large landowners and the middle class of Algeria. The Arab population, by contrast, was primarily engaged in agriculture and was the labor force. Deep resentments lingered within the Arab population towards the seemingly well-off *colons*.

3. Opposition Strategy

Professor Bard O'Neill classifies the FLN strategy as an anticolonialist, national-liberation secessionist movement. Such groups seek to withdraw from the current political community and form their own nation-state.¹⁰⁸ Generally, the FLN followed Mao's strategy of protracted popular war even though they were Arab nationalists and Muslims rather than pure Marxists. Aviation researcher Wray Johnson poignantly describes the ideology of the FLN as "a mixture of nationalism and Islamic fundamentalism with a bit of Marxism thrown in."¹⁰⁹

4. Popular and External Support

The FLN used the lingering political, social, and economic discrimination by the *colons* to fuel a widespread surge of nationalism directed at the colonial authorities. Pro-French Algerians that resisted the FLN were subsequently targeted for terrorist attacks.¹¹⁰

¹⁰⁶ Shrader, *The First Helicopter War*, 5-12.

¹⁰⁷ Of the Arab population, about 800,000 were ethnically distinct Berbers living in the Kabylia and Sahara regions. They spoke their own language and were Christians before being conquered and forced to convert to Islam in the seventh through eleventh centuries. The Berbers were known for fierce independence and have traditionally resisted Arab political dominance. This mutual antipathy was reflected in internal conflicts within the FLN. See Shrader, *The First Helicopter War*, 13; 143.

¹⁰⁸ O'Neill, *Insurgency & Terrorism*, 24-25.

¹⁰⁹ Corum and Johnson, *Airpower in Small Wars*, 164.

¹¹⁰ It is important to note that during the war, as many Algerians fought on the side of the French as on that of the FLN nationalists. An Algerian militia, known as the *harkis*, proved to be effective in limiting FLN support in the countryside. As many as 60,000 *harkis* were under arms supporting the French. See Corum and Johnson, *Airpower in Small Wars*, 166.

Other Arab countries of North Africa and the Middle East spurred by pan-Arabism and anticolonialism fervently supported the FLN. Countries such as Egypt, Libya, Tunisia, and Morocco provided funds, arms and equipment, and external bases. The latter two countries, both sharing a border with Algeria, provided the most substantial support to the Algerian rebels and were thus a primary concern for French ground and air forces.

5. Framework for Analysis

When the war began, French airpower in Algeria was said to have been limited to eight aging transport aircraft and one helicopter.¹¹¹ French forces rapidly increased in Algeria, swelling to 400,000 troops. French air forces in Algeria grew similarly to a peak of over 35,000 personnel and nearly 700 fixed-wing aircraft. Of considerable importance to airpower in Algeria was the imaginative and extensive use of the helicopter.

By 1960, the French utilized over 400 helicopters ranging from light reconnaissance versions to heavy-lift transport aircraft. The French also pioneered the first extensive operational use of helicopter gunships. The introduction of these numerous helicopters and the development of organizations and tactics for their use was a resounding success, providing French force with a tactical and logistical mobility unmatched by the FLN.¹¹² While some researchers dispute the overall success of helicopter operations in Algeria, the imaginative use of these assets was of critical importance in all areas of the Leites and Wolf model.¹¹³

a. Input-Denial

Leites and Wolf's input denial strategy seeks to effectively reduce the amount of resources available to a combatant by controlling both the supply and prices of

¹¹¹ Towle, *Pilots and Rebels*, 121.

¹¹² Shrader, *The First Helicopter War*, 115-116. For Command and Control of airpower, the French assigned aircraft to one of three Tactical Air Commands (GATACs) and then allocated these assets to each division for its own dedicated reconnaissance and close air support capability. Jet fighters and transports were "leased" to the GATAC to temporarily augment these forces on an emergency basis as required by the operations situation. Overall, coordination and integration of air operations among the Army, Navy, and Air Force were excellent and the decentralization of air assets was highly effective. See Shrader, *The First Helicopter War*, 124.

¹¹³ Lauded French author Bernard Fall suggests that "the results of 'heliborne operations were not overly successful. The Algerian nationalist soon learned about the foibles of the lumbering and noisy craft and quickly developed effective techniques for helicopter baiting and trapping." See Fall, *Street Without Joy*, 261.

inputs. Reducing the access to such inputs “requires the interdiction of external sources by border surveillance, barriers, or coercive measures applied directly against the external source of supply.”¹¹⁴ The FLN enjoyed two such external sources in the neighboring countries of Tunisia and Morocco. These countries helped funnel men and materiel from other Arab nations while also providing a sanctuary for ALN training.

France responded by capitalizing on Leites and Wolf’s suggestion of surveillance and barriers. They erected elaborate defensive lines along the Moroccan and Tunisian borders. The most famous of these was the Morice Line, a 320-kilometer long electrified fence and minefield studded by strongboxes containing French troops. Ground surveillance was augmented by twenty-four hour visual and radar aerial surveillance over the barrage. Helicopter-borne mobile units tracked and attacked any ALN units that managed to cross the barrage.

This input-denial strategy, while expensive in terms of manpower and materiel, proved highly effective. The barriers reduced “traffic by as much as 90 percent, the French reached in North Africa the goal that eluded them—and their American successors—in Indochina. Cutting off infiltrators bringing help from outside, they threw the ALN back on its own resources, and as the offensive against it stepped up, these grew ever more meager.”¹¹⁵

b. Counter Production Process

While the barrages limited exogenous support, the *quadrillage* defensive technique proved to be vitally important at degrading the FLN’s endogenous capability. Unfortunately, these two techniques tied down 80,000 and 300,000 French troops, respectively, leaving little more than 15,000 men for intervention forces.¹¹⁶ Because of the manpower-intensive campaigns on the ground, French aviation thus served as a force-multiplier and was a key tool for prosecuting wider psychological warfare. Similar to the British in Malaya, the French utilized airpower for both loudspeaker operations and leaflet drops over isolated villages encouraging FLN members to surrender.

¹¹⁴ Leites and Wolf, *Rebellion and Authority*, 78.

¹¹⁵ John E. Talbott, *The War Without a Name: France in Algeria, 1954-1962* (New York: Alfred A Knopf, Inc., 1980), 184.

¹¹⁶ Alexander, “France and the Algerian War,” 15.

Perhaps the most significant impact of airpower in Algeria was sanctuary denial given the vast expanse of the Sahara desert available to the FLN. As author Arthur Campbell describes:

Open plains are obstacles to guerrillas because they have to concede mastery of the air to their opponents. Before the onset of air power, Lawrence and his Arabs were able to retreat at will into the Arabian deserts, but the FLN [National Liberation Front] in Algeria, opposed by a powerful French air force, were denied access to the vast reaches of the Sahara.¹¹⁷

Unfortunately, some operational techniques utilized by the French drastically hindered the counter-production process. One draconian measure adopted by the French military that helped foster the production process of the FLN was “collective responsibility.” Originally planned as a form of reprisals for offenses, the strategy inevitably led down a path of vicious escalation as the brutality of both sides escalated to include torture, rape, and mutilation. The result of the measure often steeled the resolve of the FLN, further isolating the *colons*, and outraging French citizens when finally exposed.¹¹⁸

c. Counterforce

Because of the barrages, the ALN had three options available to them: to infiltrate small groups through the barrages hoping to avoid detection; to skirt the barrages to the south through the open desert, where even small convoys were vulnerable to aerial observation and attack by aircraft or helicopter-borne force; or to blast through the barriers in major combat operations involving large forces. The ALN attempted all three without appreciable success, largely due to the direct counterforce application of airpower.¹¹⁹

¹¹⁷ Arthur Campbell, *Guerrillas* (New York: The John Day Co., 1968), 283. As cited in O'Neill, *Insurgency & Terrorism*, 72.

¹¹⁸ Alistair Horne, *A Savage War of Peace: Algeria 1954-1962* (New York: Penguin Books, 1987), 113-115. Airpower assets were also utilized for “collective responsibility.” This practice included the destruction of a *douar* (village) by aerial bombardment following attacks against French forces. In one case, the bombing of the village of Sakiet resulted in at least eighty civilians killed. Subsequent press coverage caught the attention of the world and the United Nations. Thus, a squadron of B-26 bombers handed the FLN one of its most important propaganda victories of the war. See Corum and Johnson, *Airpower in Small Wars*, 172.

¹¹⁹ Shrader, *The First Helicopter War*, 204.

Despite the successes of direct counterforce operations, the application of airpower in the indirect counterforce role proved to be even more effective. Aerial reconnaissance and intelligence were instrumental to the French effort. A few statistics bear this out. In 1959, out of 144,000 missions flown by the French air force, 50,000 were either visual or photographic reconnaissance. There were over twice as many reconnaissance missions flown than those undertaken to provide supporting fire (24,200), the other key task of the air force.¹²⁰ The results of these reconnaissance missions were dramatic and effective: army intelligence officers in the Atlas Mountains were in agreement that “75 per cent of intelligence in their possession came from air force sources.”¹²¹

d. Active Defense

The French utilized passive measures such as the *quadrillage* system and population relocation away from the barrage areas. Airpower was primarily effective in the active defense role, largely while it was accomplishing other missions, such as aerial reconnaissance. The French in Algeria met Leites and Wolf’s idea of a light aircraft with their U.S.-built WW II T-6 trainer. Indeed, the T-6 proved to be the primary aircraft of the war: prior to 1960, some twenty-three squadrons were flying it. The ubiquitous T-6 played a central role in the war by its constant presence, thus providing an important psychological edge to the French.¹²²

FLN and ALN prisoners and defectors placed particular emphasis on the psychological impact made by the ever-present aircraft:

The inhabitants of the douars (native villages) have become used to aerial reconnaissance. . . If a plane persists in flying around inhabited areas, they fear the prospect of a military operation and ask the people they are hiding

¹²⁰ Marie-Catherine Villatoux and Paul Villatoux, “Aerial Intelligence during the Algerian War,” in *France and the Algerian War 1954-62*. Edited by Martin S. Alexander and J.F.V. Keiger (London: Frank Cass Publishers, 2002), 75.

¹²¹ Villatoux, “Aerial Intelligence,” 75. A rather poignant example was when French forces located and destroyed an ALN band in the Sahara simply because a reconnaissance pilot reported an unusual type of shrub growing on a sand dune. See Towle, *Pilots and Rebels*, 122.

¹²² Corum and Johnson, *Airpower in Small Wars*, 168-169.

to move on elsewhere. The rebels fear observation craft greatly. This obliges them to take a lot of precautions in their movements and in setting up camp.¹²³

D. ANALYSIS

The relative superiority of the French in Algeria, especially in terms of mobility and ability to interdict exogenous support, ensured that the painful military loss in Indochina was not repeated in Northern Africa. Despite French technological superiority, the climate, terrain, and plentiful concealment provided by the jungle in Indochina greatly offset French airpower's ability to locate and negatively affect the Viet Minh. Additionally, the French in Indochina lacked adequate numbers and types of aircraft to make a critical difference.

The situation in Algeria was strikingly different. The French were blessed with a physical environment that allowed them to use their technological superiority to advantage. They also enjoyed a more extensive commitment of men and materiel to the war effort while being able to adversely impact the influx of resources through the *quadrillage* system and barrages, making both insurgents and their supply chains and extremely vulnerable to aerial observation and attack.

Author Charles Shrader appropriately suggests that in Algeria, the French had the primary advantage of controlling the contested ground with a long-established and fully functioning political, administrative, military, and logistical system in place. Shrader claims that “Even the most sacred of guerrilla logistical birthrights—a sea of friendly local supporters in which to swim—was for the Algerian rebel a pond polluted by *pieds noirs*” and Muslims loyal to France.¹²⁴

Nonetheless, the FLN eventually achieved politically what it could not achieve on the battlefield—independence from France. The French involvement in both Indochina and Algeria exemplify the importance of the political aspect in the milieu of small wars. James Corum accurately describes this conundrum: “a determined people motivated by nationalism and armed with little more than patience and a willingness to die in large

¹²³ Villatoux, “Aerial Intelligence,” 75-76.

¹²⁴ Shrader, *The First Helicopter War*, 228-231.

numbers can win against a well-led and armed modern military force supported by the latest technology and plenty of airpower.”¹²⁵

¹²⁵ Corum and Johnson, *Airpower in Small Wars*, 174.

V. SMALL WARS OF THE UNITED STATES

A. INTRODUCTION

Russell Weigley, in his seminal work *The American Way of War*, suggests that “in the history of American strategy, the direction taken by the American conception of war made most American strategists, through most of the time span of American history, strategists of annihilation.”¹²⁶ Military correspondent Max Boot, however, contends that “this is only one way of American War. There is another, less celebrated tradition in U.S. military history—a tradition of fighting small wars.”¹²⁷ Other prominent historians agree with Boot, Colin Gray suggests that “The United States has a vast storehouse of firsthand historical experience that should educate its soldiers in the need to recognize that regular and irregular warfare are significantly different.”¹²⁸

Thus, the United States has a surprisingly rich history of waging this “other” American way of war in which airpower has often played a vital, albeit supporting role. One of the first of these post-World War II small wars, the Anti-Huk Campaign in the Philippines, came directly on the heels of the Allied victory in the Pacific. The second case presented here, the civil war in El Salvador, was waged nearly three decades later and continued past the end of the Cold War. While these two small wars are separated by differences in terms of time period, location, and technologies utilized, they both highlight the importance of the non-kinetic roles of airpower. Perhaps more significantly, they both represent examples of the potentially devastating political ramifications resulting from the inappropriate or indiscriminate use of airpower.

¹²⁶ Russell F. Weigley, *The American Way of War* (Bloomington, IN: Indiana University Press, 1973), xxii.

¹²⁷ Boot, *The Savage Wars of Peace*, xiv.

¹²⁸ Colin S. Gray, “The American Way of War: Critique and Implications,” in Anthony D. McIvor, ed., *Rethinking the Principles of War* (Annapolis, MD: Naval Institute Press, 2005), 31.

B THE ANTI-HUK CAMPAIGN

1. Background

On 29 March 1942, the *Huko ng Bayan laban sa Hapon* (The People's Anti-Japanese Army), or shortened to the Tagalog acronym, Hukbalahap, was formed as the military arm of the Philippine Communist Party (PKP). Nicknamed the Huks, this guerrilla force served with distinction during World War II, but largely operated independently from the United States Armed Forces Far East (USAFFE)-sponsored guerrillas.¹²⁹ Following the war, many former Huk guerrillas concealed their weapons or fled to the mountains.

The PKP won six congressional seats in the 1946 elections, but were excluded from the legislature due to charges of using terrorist methods. Landlord and police-instigated violence escalated against the peasantry throughout the Philippines. Following the assassination of a prominent PKP member, Huk veterans retrieved their weapons and incited a rebellion that would last until 1955. The peasants rebelled not because of their relative deprivation compared to the local elites. The major reason for discontent was that the traditional ties between patrons and clients had been severed.¹³⁰ Simply put, the former clients wanted to own the land on which they had worked for generations.¹³¹

In 1950 Ramon Magsaysay was appointed Secretary of the Department of National Defense. His transformational vision for the struggle, along with assistance and advice from the Joint United States Military Assistance Group (JUSMAG), resulted in the Philippine government establishing a number of social, economic, and military reforms aimed at exploiting the inherent division between the peasants comprising the

¹²⁹ In 1948 the Huks again changed their name to *Hukbong Magapalaya ng Bayan* (The People's Liberation Army), or HMB. For expedience, this work will continue to use the term "Huk" to describe resistance forces.

¹³⁰ Benedict J. Kerkvliet, *The Huk Rebellion: A Study of Peasant Revolt in the Philippines* (Berkeley, CA: University of California Press, 1977), 250.

¹³¹ Major Lawrence M. Greenberg, *The Hukbalahap Insurrection: A Case Study of a Successful Anti-Insurgency Operation in the Philippines, 1946-1955* (Washington, D.C.: U.S. Army Center of Military History, 1987), 46-47.

rank and file of the Huks and the revolutionary elites in the movement.¹³² Magsaysay's influence and the government's actions represent the turning point in the campaign. Huk atrocities further alienated the guerrillas from a once-supportive population and hastened the end of the struggle.¹³³ The war cost the Huks almost ten thousand dead. More importantly, the Huks suffered over four thousand captured and nearly sixteen thousand surrendered. By way of contrast, the Government losses were 1,578 dead.¹³⁴

2. Environment

The Philippine Islands are an archipelago of over 7,000 islands stretching over 1,800 kilometers from north to south. The total land area is around 300,000 square kilometers: similar in total size to the state of Arizona, but spread out larger than California. Of this territory, the islands of Luzon and Mindanao represent roughly 65 percent of the total land mass.¹³⁵ Topographically, the area is largely mountainous with narrow coastal plains and interior valleys. Much of the area is enveloped by tropical forests that benefit from the temperate climate and seasonal monsoons.

In 1950, the Philippines had a population of 20 million, 95 percent of whom were concentrated on the 11 largest islands. Ethnically and racially, Filipinos were principally a blend of Malay, Spanish, Chinese, Negrito, and Americans. Roughly 85 percent of the population was Roman Catholic, but the population in the southern islands was predominantly Muslim. Historically, social cleavages were based primarily on religious

¹³² O'Neill, *Insurgency & Terrorism*, 173. Magsaysay's counterinsurgency slogan was "All Out Friendship or All Out Force." Military reform and reorganization included a massive increase in size and capability of the army, pay raises, and systematic elimination of corrupt, lawless, and undesirable officers. The most prominent civic program was the Economic Development Corps (EDCORPS), which provided land, funds, and farming equipment for surrendering Huks. A weapons buy-back program instituted by Magsaysay also resulted in seizure of 15,000 weapons; 110,000 hand grenades; and nearly 14 million rounds of ammunition from Huk forces. For information on EDCORPS See Kerkvliet, 239; Jose V. Abueva, *Ramon Magsaysay: A Political Biography* (Manila, Solidaridad Publishing House, 1971), 165; 371. Due to Magsaysay's untimely death in 1957, many of his reforms were never fully institutionalized.

¹³³ One particularly devastating atrocity committed by the Huks was the killing of former President Quezon's widow and daughter during a Huk ambush. Not surprisingly, Huk leader Luis Taruc, in his own recollection of the event, claims the killing of Mrs. Quezon was an accident. He suggests that although the victims of the attack were "class enemies," the incident itself was a "deplorable event" and that "the propaganda office of the army and the press [exploited] her death with tremendous effect." See Luis Taruc, *He Who Rides the Tiger: The Story of an Asian Guerrilla Leader* (New York: Frederick A Praeger, 1967), 75.

¹³⁴ Numbers from Victor Flinham, *Air Wars and Aircraft: A Detailed Record of Air Combat, 1945 to the Present* (New York: Facts on File, 1990), 323.

¹³⁵ Major Thomas Erik Miller, *Counterinsurgency and Operational Art: Is the Joint Campaign Planning Model Adequate?* (Fort Leavenworth, KS: School of Advanced Military Studies, 2003), 27.

(Christian versus Muslim), socio-cultural (upland versus lowland tribes), and urban-rural differences rather than ethnic or racial ones.¹³⁶

3. Opposition Strategy

The principle groups of the Huks represented a Marxist variant of an egalitarian insurgent movement. Such movements seek to impose a new system of government based on the value of distributional equality and centrally-controlled structures. Egalitarian insurgents typically seek to mobilize the populace and radically transform the existing social structure.¹³⁷

The Huk Politburo determined that by January 1950 a revolutionary situation existed and directed that militarily the Huks convert from guerrilla operations to mobile warfare. Attacks increased 1000 percent from their pre-1950 levels, as well as in boldness.¹³⁸ By early 1952, however, the pressure from the Armed Forces of the Philippines (AFP) in the form of large-scale offensives and constant small unit actions forced the Huks to revert to guerrilla operations for the remainder of the campaign.¹³⁹

4. Popular and External Support

One researcher aptly described the importance of popular support during this period: “The key to Huk success and persistence stemmed almost entirely from the active support of the local people.”¹⁴⁰ Guerrilla leader Luis Taruc affirmed this notion by saying in 1948 that “the Huks can only hold out as long as it is supported by the masses. No more, no less.”¹⁴¹

The rebellion was at its strongest from 1949 to 1951. Armed Huks numbered between eleven thousand and fifteen thousand: roughly equal to the armed strength of the earlier Hukbalahap resistance army, and enjoyed a massive support base of 2 million. The problem according to Huk leaders was not too few people to fill the active guerrilla army or the support groups, but insufficient ammunition and supplies for all who wanted

¹³⁶ Major Rodney S. Azama, *The Huks and the New People's Army: comparing two postwar Filipino insurgencies* (Quantico, VA: Marine Corps Command and Staff College, 1985).

¹³⁷ Bard O'Neill, *Insurgency & Terrorism*, 20.

¹³⁸ Greenberg, *The Hukbalahap Insurrection*, 65.

¹³⁹ Miller, “Counterinsurgency and Operational Art,” 38.

¹⁴⁰ Greenberg, *The Hukbalahap Insurrection*, 46.

¹⁴¹ Kerkvliet, *The Huk Rebellion*, 247.

to join.¹⁴² Active support for the insurgents eventually waned largely due to the continued socioeconomic reforms introduced by the Magsaysay administration.¹⁴³

The lack of a contiguous external sanctuary severely handicapped the Huks and limited their ability to expand small-scale guerrilla attacks into a sustained wide-spread guerrilla campaign.¹⁴⁴ The Huks, therefore, sought the refuge of the mountains near Mount Arayat in central Luzon in an area that they dubbed “Huklandia.”

5. Framework for Analysis

On 1 July 1947, the Philippine Air Force (PAF) became operationally independent of the army. The fledgling service contained a single squadron of P-51D Mustangs single engine fighter-bombers and several C-47 transports, the military version of the famous DC-3. All of the aircraft were based out of Manila, but could operate from outlying fields when the need arose.¹⁴⁵ Other than participating in a few resupply missions, the Philippine Air Force (PAF) did not play a significant role during the first portion of the insurrection.

After 1950, the air force increased in both size and function, largely influence by U.S. government aid and advice, and assumed a more significant role in the anti-Huk campaign.¹⁴⁶ The air force received new single-engine propeller driven liaison aircraft such as the T-6s of Algerian fame and L-5s from U.S. stock. The fighter-bomber inventory also increased with the addition of two squadrons of upgraded F-51 Mustangs. Unfortunately, only a handful of C-47s remained available and the PAF had but one helicopter to operate in southern Luzon.¹⁴⁷ The limited type and number of aircraft affected the ability to wage several of the roles within the Leites and Wolf framework.

¹⁴² Kerkvliet, *The Huk Rebellion*, 210.

¹⁴³ O'Neill, *Insurgency & Terrorism*, 172.

¹⁴⁴ O'Neill, *Insurgency & Terrorism*, 147-148.

¹⁴⁵ Flintham, *Air Wars and Aircraft*, 322.

¹⁴⁶ Greenberg, *The Hukbalahap Insurrection*, 67. It would be remiss in any discussion of United States involvement in the Philippines to not include the monumental impact of United States Air Force Lt Col Edward Lansdale. While beyond the scope of this work, Lansdale's influence as Magsaysay's de facto personal advisor and counterinsurgency guidance were instrumental in turning the tide of the war. For Lansdale's personal account of his experiences in the Philippines see Edward Lansdale, *In the Midst of Wars: An American's Mission to Southeast Asia* (New York: Harper and Row, 1972).

¹⁴⁷ Corum and Johnson, *Airpower in Small Wars*, 131.

a. *Input-Denial*

As in Malaya, denying the inputs to a largely endogenously-supported and elusive enemy under dense tropical foliage proved a difficult challenge for air forces. From the PAF's perspective, supply lines between villages and Huk jungle hideouts were often inexplicably short. To supplement food received by local sympathizers, the Huks started to develop "production bases" as early as 1948. In reality, these bases were small farms run and protected by Huks that protected them from the government by widely dispersing their locations. L-5 reconnaissance aircraft, along with information collected through infiltration and informants, often were used to find these bases. These bases became vital once the Philippine Army severed Huk logistics in 1951.¹⁴⁸ While certainly a viable input-denial target for airpower, the PAF did not often target these bases directly. Instead, government actions against the bases can ostensibly be described as counter-production actions.

b. *Countering the Production Process*

Early in the conflict, the PAF damaged the government's popular support. It often utilized its P-51 Mustangs to strafe and bomb suspected Huk locations. These often indiscriminant attacks caused more damage to civilians than to the Huks. Based on the substantial loss of popular support and resulting sympathy for the Huk cause, the government placed tighter controls and restricted the employment of the fighter-bomber aircraft by mid-1950.¹⁴⁹

On the positive side, the PAF did have a significant impact on degrading the production process of the Huks. The ubiquitous L-5 dropped leaflets and broadcast PSYOPS messages, often utilizing a crude but innovative setup of megaphones and loudspeakers.¹⁵⁰

As the Huks retreated further into the mountains, their food supply depended upon what they could produce themselves at their established bases. Similar to

¹⁴⁸ Greenberg, *The Hukbalahap Insurrection*, 56.

¹⁴⁹ Greenberg, *The Hukbalahap Insurrection*, 76.

¹⁵⁰ Corum and Johnson, *Airpower in Small Wars*, 131. One particularly effective PSYOPS technique utilizing airpower was for an L-5 pilot flying over a small battle to broadcast the names of known Huks below. The pilot would thank "informers" on the ground for assisting the army in finding their unit. Not knowing whether it was true or not, several mock trials were held and more than one innocent guerrilla was executed by fellow Huks. See Greenberg, *The Hukbalahap Insurrection*, 121.

the British in Malaya, reconnaissance aircraft were used to spot such cultivated areas. Unlike the Royal Air Force, however, the Philippine Air Force did not use chemical agents for defoliation. Instead, the government flew agricultural experts over the areas to determine the approximate harvest time. Just prior to the imminent harvest, ground forces would raid and destroy the base.¹⁵¹

c. Counterforce

The effectiveness of the direct counterforce application of airpower in the Philippines is an issue that has generated considerable debate. Opposition leader Luis Taruc claimed in his autobiography that in six years of fighting, PAF air strikes resulted in killing only 12 guerrillas.¹⁵² Due to the stringent restrictions on the PAF fighter-bombers, most of the targets were such that PAF aircraft utilized either 100-pound bombs or strafed with .50 caliber machine guns. Attacks with larger ordnance were limited to large isolated base camps in the mountains.¹⁵³ During the Huks' transition into maneuver warfare, the Philippine Armed Forces began to enjoy synergistic advantages from integrated air support to ground operations. During an operation near Mount Arayat in the summer of 1952, the PAF flew P-51 fighters as close air support to a BCT on the ground for the first time.¹⁵⁴

¹⁵¹ A. H. Peterson, G. C. Reinhardt, and E. E. Conger, eds., *Symposium on the Role of Airpower in Counterinsurgency and Unconventional Warfare: The Philippine Huk Campaign* (Santa Monica, CA: Rand, 1963), 36. One extremely effective ground operation for waging psychological warfare and generally causing mistrust and dissension within the rank and file of the Huks was the so-called Force X. Members of the Philippine Constabulary initially formed Force X in 1948. The idea of Force X (later executed by a similar unit named Charlie Company) was to use specially trained forces to imitate a Huk unit to infiltrate deep into enemy territory for extended periods. While not often used, such 'pseudo-gangs' were highly instrumental in terms of long-term intelligence collection, use of "dirty tricks" such as planting sabotaged ammunition in Huk caches, and even killing or capturing high ranking Huk leaders. In one operation, for example, 20 members of Force X infiltrated the Huk organization and, after 3 months of establishing their cover, held a "by invitation only" barbecue for the Panay High Command. During the dinner the Force X team captured nearly all of the Panay commanders and crippled the Huk organization on the island for the remainder of the insurgency. See Lawrence E. Cline, *Pseudo Operation and Counterinsurgency: Lessons From Other Countries* (Carlisle, PA: U.S. Army War College Strategic Studies Institute, 2005) 1-8.

¹⁵² Taruc, *He Who Rides the Tiger*, 41. Taruc goes so far as to claim that these twelve losses were the result of carelessness or recklessness on behalf of the Huks. Taruc completely disregarded the counterforce role of airpower. He explains: "It could be both amusing and saddening to watch the Philippine Air Force busily bombing and strafing . . . the unfortunate trees and vegetation." 42.

¹⁵³ Alnwick, "Perspectives on Air Power."

¹⁵⁴ It is not surprising that air support was effective during this particular operation: the Air Force commander happened to be the son of the BCT commander. This type of cooperation, however, continued to improve through the remainder of the campaign. See Peterson et al., *Symposium on the Role of Airpower*, 26.

While the merits of the direct counterforce of the PAF are questionable, the indirect counterforce role, in terms of transportation and aerial resupply, proved vital to the counterinsurgency effort. Due to the limited number of C-47 transports and helicopters, the L-5, a surplus World War II artillery observation aircraft, often performed yeomen work for these essential duties. In one prominent example, two BCTs received daily supplies flown by only two L-5 aircraft during a seventy-two day operation deep in rugged terrain devoid of roads.¹⁵⁵

The Philippine Air Force also developed a system of informers on the ground that worked in conjunction with daily reconnaissance flights to help identify where the insurgents were operating. To keep the Huks from discovering the informers, the PAF utilized an elaborate set of signals. These included the position of haystacks, farm animals, plows and other objects to communicate the size and location of Huk units. Defecting Huks represented prime sources of information and were often carried aloft to help locate their former Huk camps.¹⁵⁶

d. Active Defense

Similar to the T-6 in Algeria and the Morane in Indochina, the ubiquitous L-5 became synonymous with the PAF and represented government authority. The routine nature of L-5 flights lulled the Huks into a false sense of security.¹⁵⁷ While grenades dropped from L-5s often aroused the Huks from their complacency regarding this simple platform, sometimes the passenger riding aboard the L-5 would have a similar effect on the Philippine Armed Forces. Airpower author Wray Johnson explains:

One of the more celebrated capabilities that PAF L-5s and other light airplanes brought to the pacification effort was the ability to extend government presence into rural areas, and in particular facilitate the

¹⁵⁵ Lacking adequate parachutes, rattan spheres were often utilized to drop supplies. During this particular mission, each L-5 supplied provisions for five companies, thus requiring five missions per day. The commander of the operation recounted, "In this period of 72 days none of my troops—squad or platoon—missed a meal." See Greenberg, *The Hukbalahap Insurrection*, 135 and Corum and Johnson, *Airpower in Small Wars*, 131.

¹⁵⁶ Colonel Kenneth J. Alnwick, "Perspectives on Air Power at the Low End of the Conflict Spectrum," *Air University Review*, March-April, 1984.

¹⁵⁷ Corum and Johnson, *Airpower in Small Wars*, 130.

frequent visits by Ramon Magsaysay to the barrios and frontline military units. By his mere presence, villagers and soldiers were often persuaded that the government cared about them.¹⁵⁸

Thus, it can be concluded that airpower in the Philippines played primarily a supporting role. The physical environment of the Philippines, the nature of the Huk insurgency and their predominantly guerrilla strategy, and certainly the diminutive size of the PAF in terms of types and numbers of useful aircraft all limited the influence of airpower. Transportation, resupply, and reconnaissance again made the most significant impact. PSYOPS, support to civic action and close air support played important roles as well.¹⁵⁹ As airpower researcher Colonel Kenneth Alnwick suggested, “The air operations and tactics of the Philippine Air Force were not in themselves decisive factors in the Huk campaign, but they were vital elements of Magsaysay’s integrated use of all the elements of national power to defeat the Huk insurgency.”¹⁶⁰

C. EL SALVADOR

1. Background

The Civil War in El Salvador that spanned from 1980 to 1992 had its roots in the oligarchic aspects of the political, social, and economic features of the country.¹⁶¹ In October 1979, reform-minded military officers ousted authoritarian President Carlos Humberto Romero and established a five-member military-civilian junta. Unfortunately, the junta was unable to deliver on its promises to alleviate the ills of the previous administration, and a three-sided struggle erupted among democratic reformers, the previous oligarchy, and revolutionary Marxist-Leninists.¹⁶²

Amidst the political chaos, the opposition groups amalgamated into one large alliance, the Marxist Farabundo Martí National Liberation Front (FMLN).¹⁶³ Rebel offensives achieved significant gains early in the war largely fueled by the harsh

¹⁵⁸ Corum and Johnson, *Airpower in Small Wars*, 132.

¹⁵⁹ Corum and Johnson, 132-133.

¹⁶⁰ Alnwick, “Perspectives on Air Power.”

¹⁶¹ Bynum E. Weathers, “LIC Doctrine, Strategy, and Force Configurations in Guatemala and El Salvador.” in *Responding to Low-Intensity Conflict Challenges* (Maxwell Air Force Base, AL: Air University Press, 1990), 144.

¹⁶² Weathers, “LIC Doctrine,” 150-151.

¹⁶³ James S. Corum, “The Air War in El Salvador,” *Airpower Journal* (Summer 1998), 30.

government response punctuated by the draconian actions of “death squads.” Under the newly elected Reagan administration, U.S. support to the El Salvadoran armed forces (ESAF) was fairly swift. In 1981, the U.S. had provided nearly 50 million dollars worth of equipment, credits and aid. This increased to nearly 85 million in 1982.¹⁶⁴ Part of this aid came in the form of the training and advisory assistance of the U.S. Military Group (MilGroup) in El Salvador. Thanks to political constraints, the size of the MilGroup was limited to no more than fifty-five U.S. military personnel in El Salvador at any time.¹⁶⁵ By 1984, a more robust and tactically-refined ESAF, led by the newly elected President Jose Napoleon Duarte, reclaimed the initiative from the rebels. The war became a prolonged struggle with neither side seemingly capable of achieving military victory. Exhausted after over a decade of war, a cease-fire was agreed upon in 1991. The Government of El Salvador (GOES) and the FMLN signed peace accords in early 1992, thus bringing a negotiated settlement to the war.

2. Environment

El Salvador is a small country encompassing just over 8,000 square miles, about the size of the state of Massachusetts. Two east-to-west mountain ranges divide the country into three distinct topographies: a coastal region along the Pacific, a central plateau, and a mountainous region in the North. The climate is generally tropical, but tends to be more moderate in the higher elevations. El Salvador, unlike other countries in the region, does not contain jungles. Instead, unpopulated areas are mostly grasslands or cultivated for crops. The core of the Salvadoran economy was agriculture; and the center of the agrarian system was coffee which by 1978 accounted for over 53 percent of the value of all exports.¹⁶⁶

¹⁶⁴ Corum, “The Air War in El Salvador,” 31.

¹⁶⁵ The United States Air Force (USAF) typically provided five of the 55 advisors in El Salvador: one Branch Chief and four maintenance specialists. USAF trainers provided technical advice on training and maintenance procedures. They also provided limited operational and tactical military advice, but could not physically perform functional procedures on FAS aircraft or equipment. The USAF advisors were restricted from working on aircraft or loading armament, and USAF pilots were prohibited from flying with Salvadorans on combat or combat support missions. See Major John W. Doucette, *U.S. Air Force lessons in Counterinsurgency: Exposing Voids in Doctrinal Guidance* (Maxwell Air Force Base, AL: School of Advanced Airpower Studies, June 1999), 45.

¹⁶⁶ Hugh Byrne, *El Salvador's Civil War: A Study of Revolution* (Boulder, CO: Lynne Rienner Publishers, 1996), 18.

At the outbreak of the war, El Salvador contained nearly five million residents resulting in a population density of nearly 570 people per square mile, the highest in all of Central America. Eighty-nine percent of the population was Mestizo (of both Spanish and Indian descent). Ten percent were Indian, and less than one percent Caucasian.¹⁶⁷ Salvadoran society was sharply divided into elite, middle, and lower classes. While only comprising 2 percent of the population, the elite helped establish the oligarchic government, owned more than half of the arable land, and generated one-third of the nation's annual income.¹⁶⁸ The lower class comprised nearly 90 percent of the population, lived in rural areas, and toiled largely as seasonal wage laborers. As defense analyst Benjamin Schwarz observed, "Under a basically feudal structure, with the most skewed land tenure system in Latin America, a tiny elite ruled—but did not govern—an increasingly impoverished majority."¹⁶⁹

3. Opposition Strategy

Similar to the Huks in the Philippines, the principal groups of the FMLN were Marxist egalitarian insurgents. The FMLN, however, was comprised of multiple independent groups that pursued several strategies, including military-focus and protracted-popular-war approaches, simultaneously.¹⁷⁰

The FMLN initially utilized a strategy seeking quick victory through military action, imitating the 1979 Sandinista victory in Nicaragua. Largely influenced by U.S. assistance and eventual Salvadoran military successes, however, the FMLN dropped this

¹⁶⁷ Marvin E. Gettleman, "El Salvador in Brief," in Marvin E. Gettleman et al, eds. *El Salvador: Central America in the New Cold War*, revised (New York: Grove Press, 1986), 3, 54.

¹⁶⁸ Brozenick, *Small Wars*, 124.

¹⁶⁹ Benjamin C. Schwarz, *American Counterinsurgency Doctrine and El Salvador: the Frustrations of Reform and the Illusions of Nation Building* (Santa Monica, CA: Rand, 1991), 9. While most historians agree that economic factors played an essential role in the revolutionary crisis of El Salvador, the degree to which they influenced the revolt is debatable. Byrne presents an alternative viewpoint and suggests that "The roots of intransigence seem to lie more in history and ideology than in economic structures and relations per se." See Byrne, *El Salvador's Civil War*, 43.

¹⁷⁰ For the sake of expediency, the term "FMLN" here denotes the collective organization of rebellion. It is important to understand the diversity of the multiple groups that comprised the FMLN. Dichotomous motives and strategies resulted in friction within the FMLN. For an excellent analysis of the FMLN organizational structure and the inter-workings of the five prominent guerrilla organizations see Col John D. Waghelstein, *El Salvador: Observations and Experience in Counterinsurgency* (Carlisle Barracks, PA: United States Army War College, 1 January 1985).

strategy for one of a prolonged people's war punctuated by political warfare of terrorism and assassination of government officials.¹⁷¹

4. Popular and External Support

Most of the ESAF viewed Nicaragua as the FMLN's primary sponsor. The United States, however, looked beyond Nicaragua's participation and saw the FMLN as an auxiliary force of the Cuban and Soviet regimes.¹⁷² The flow of materiel to the FMLN was of importance to both U.S. and Salvadoran strategies. But despite accurate U.S. information regarding the logistical flow, the sophistication of the external supply network stymied both governments. U.S. intelligence agencies understood that many shipments came through Cuba, were then transported to Nicaragua, and then shipped overland through neighboring Honduras or Guatemala before reaching El Salvador. Others were ferried directly from Nicaragua to El Salvador by boat, canoe, or even small planes.¹⁷³

The FMLN also had considerable popular support within the borders of El Salvador. A 1991 Rand study suggested that the FMLN acted as a *de facto* local government in about 30 percent of the country. Up to 40,000 clandestine militia forces aided the FMLN by gathering intelligence, carrying out sabotage and hit-and-run attacks, and joining the regular guerrilla forces when needed.¹⁷⁴ More than 95 percent of the guerrilla combatants utilized by the FMLN came from the peasant class of El Salvador.¹⁷⁵

5. Framework for Analysis

When the war began, the Salvadoran Air Force (FAS) had approximately 20 obsolete helicopters and fixed-wing aircraft, mostly dating from the 1950s and imported from either Israel or France. One of the FMLN's most significant military victories came on 27 January 1982 when 100 guerrillas infiltrated the main airfield at Ilopango and

¹⁷¹ Weathers, "LIC Doctrine," 157-158.

¹⁷² Brozenick, *Small Wars, Big Stakes*, 121.

¹⁷³ Byrne, *El Salvador's Civil War*, 150-151.

¹⁷⁴ Benjamin C. Schwarz, *American Counterinsurgency Doctrine and El Salvador: The Frustrations of Reform and the Illusions of Nation Building* (Santa Monica, CA: Rand, 1991), 78.

¹⁷⁵ Byrne, *El Salvador's Civil War*, 35.

destroyed nearly half of the Salvadoran air force: five Ouragan single-seat jet-powered fighter-bombers, six UH-1Hs transport helicopters, and three C-47s while damaging an additional five aircraft.¹⁷⁶

Throughout the war, the United States augmented the FAS with ever more capable aircraft. The result of continued upgrades saw the FAS grow to over 135 aircraft. These included A-37s for close air support, O-2As for reconnaissance, and AC-47s for gunship operations. Pilot training shortages and ineffectual maintenance procedures, however, hobbled the FAS. In 1987, for example, there were only 70 active pilots for the fleet of 135 aircraft. During the same year the FAS averaged a daily operationally ready rate of less than 50 percent.¹⁷⁷ While often limited, the airpower of the Salvadoran Air Force did play a significant role, although not always positive, in terms of the framework presented here.

a. Input-Denial

Where France benefited by limiting the supply of inputs entering Algeria, the U.S.-backed ESAF military faced almost the exact opposite in El Salvador. The country possessed contiguous land borders with Honduras and Guatemala and a mere 30-mile span of the Gulf of Fonseca separated El Salvador from Nicaragua. Some researchers claim that because of environmental factors, effective interdiction of supplies and arms was not really possible.¹⁷⁸ As one U.S. intelligence analysis in 1985 described the difficulty of interdiction:

FMLN logistics routes are varied and dispersed at all levels. It is even more complex than the Ho Chi Minh trail. No single significant land route or method for moving the supplies exists. At the strategic and tactical level the system is flexible and can be described best as a spider web.¹⁷⁹

The United States, however, did make a considerable effort to deny inputs along these routes. Early in the war United States OV-1 two-person observation and reconnaissance aircraft and C-130s flying out of Honduras provided information on rebel

¹⁷⁶ Flintham, *Air Wars and Aircraft*, 365. Within a week the United States replaced these aircraft with more modern and capable aircraft.

¹⁷⁷ Bacevich et al., *American Military Policy in Small Wars*, 32.

¹⁷⁸ See Corum, "The Air War in El Salvador," 30.

¹⁷⁹ U.S. Declassified Documents II, Department of Defense, "Command Estimate Update (Intelligence Agenda): FMLN Logistics" (August 1987), as cited in Byrne, *El Salvador's Civil War*, 151.

activity in the region.¹⁸⁰ Because of the limited processing and dissemination capability of the FAS, Salvadoran airpower either could not or would not assimilate this information into their mission planning.¹⁸¹

Thus, the FMLN's ability to flow resources into El Salvador, and the U.S. and Central American allies' inability to deny the input of these resources in a region largely dominated by the United States, proved critical to the FMLN's ability to prolong the war for more than a decade.¹⁸² Where as the French reduced traffic by as much as 90 percent in Algeria the FMLN in El Salvador sought, and likely achieved, a 90 percent success rate of infiltrating arms and supplies.¹⁸³

b. Counter Production Process

If airpower proved ineffective at denying inputs, it often was detrimental to countering the production process. From the outset, the Salvadoran armed forces and their U.S. advisors sought to isolate the FMLN from the civilian population by aerial and artillery bombardment of rebel zones, destruction of crops, and the forced removal of guerrilla supporters in army sweeps through FMLN-controlled areas.¹⁸⁴ Such aerial bombardments, however, were often indiscriminately executed, resulting in a high number of civilian casualties. The resulting international human-rights issue forced President Duarte to issue rules governing the FAS bombing campaign and tightly limited aerial activities.¹⁸⁵

¹⁸⁰ Tammy Arbuckle, "Same Hardware, Same Tactics, Same Conclusions in El Salvador?" *Armed Forces Journal International*, December 1985, 46.

¹⁸¹ Doucette, *U.S. Air Force Lessons*, 54.

¹⁸² Byrne, *El Salvador's Civil War*, 152.

¹⁸³ Byrne, *El Salvador's Civil War*, 153.

¹⁸⁴ Byrne, *El Salvador's Civil War*, 130.

¹⁸⁵ The impact of airpower on civilians continues to be an extremely contentious and controversial aspect of the civil war in El Salvador led to numerous hearings before Congress. At one such hearing, the mayor of Berkeley, California estimated that in 1986 some 60,000 civilians were killed by aerial bombardment. At the other end of the spectrum, Assistant Secretary of State Elliot Abrams testified that despite admissions made by Salvadoran officers, there had been no indiscriminate bombings. Between 1981 and 1986, during which time air attacks were made against civilian areas, a plausible estimate of two thousand civilians killed is probably accurate. See Corum, "The Air War in El Salvador," 40-41.

The FAS also conducted more traditional counter production activities such as leaflet drops and aerial transportation in support of civil affairs projects.¹⁸⁶ One unique use of airpower was to help establish government legitimacy by enabling and safeguarding the massive voter turnout in the 1984 elections.¹⁸⁷ Debate exists about the efficacy of many of the psychological operations in El Salvador. According to one prominent source, the expanded Psyops effort “still failed to make a discernible impact on either civilian enthusiasm for the Salvadoran government or the guerrilla’s commitment to his cause.”¹⁸⁸

Airpower author James Corum accurately describes the limits and adverse effects of the attempt to utilize airpower in the counter production role in El Salvador:

As for an assessment of the FAS’s bombing campaign of civilian areas, it probably had some effect in harassing and disrupting the rebel strong holds, but it is doubtful that these benefits of the bombing campaign were greater than the considerable propaganda benefits that the rebels gained by being portrayed as victims of a repressive government in the international media.¹⁸⁹

c. Counterforce

While assistance from the United States built the FAS into the largest air force in Central America, its operational execution continued to mirror that of a small air force. The singular objective of most FAS missions was clear: kill the FMLN.¹⁹⁰ Prior to 1984 the FMLN’s military strategy benefited such an omni-directional FAS focus. The massing of guerrilla forces into large groups to conduct conventional operations made them more vulnerable to attack, especially from the air, and increased their casualties. This fortuitously coincided with the timing of FAS improvements in terms of training and hardware.”¹⁹¹

¹⁸⁶ Brozenick, *Small Wars, Big Stakes*, 168. It would be a mistake to not appreciate the role of civil affairs projects and their impact during most small wars: El Salvador is a prime example. For an excellent discussion of Civil Affairs in El Salvador, see Schwarz, *American Counterinsurgency Doctrine*, especially 44-56.

¹⁸⁷ Brozenick, *Small Wars, Big Stakes*, 164.

¹⁸⁸ Bacevich et al., *American Military Policy in Small Wars*, 40.

¹⁸⁹ Courm, “The Air War in El Salvador,” 41.

¹⁹⁰ Brozenick, *Small Wars, Big Stakes*, 162.

¹⁹¹ Byrne, *El Salvador’s Civil War*, 87.

Political scientist Andrew Bacevich agrees, but cites the limits of airpower in the counterforce role during small wars of extended duration against an enemy with adaptive strategies:

To be sure, during the war's quasi-conventional phase, FAS was the big killer. The Air Force's A-37 close air support aircraft and its UH-1M and MD-500 attack helicopters proved extremely effective against large FMLN formations. Once the guerrillas opted for a strategy of protracted warfare, however, lucrative targets all but disappeared. Today, the contribution of the attack assets has become much less significant—a mammoth investment of capital that now provides only a modest return.¹⁹²

The FAS, while still enamored with expensive aircraft arguably better suited to conventional warfare, also employed effective indirect counterforce methods of airpower. The FAS operated O-2A aircraft for both reconnaissance and intelligence gathering. While often inadequate for developing an intelligence picture of the battlefield, the O-2s proved effective in dispersing FMLN troop concentrations.¹⁹³ If contact was made with the enemy, the FAS could quickly transport company-sized forces for reinforcement. The helicopter often proved the only practical means to transport troops throughout much of the country due to the mountainous terrain and ineffective road structure.¹⁹⁴

d. Active Defense

In early 1986 the Salvadoran armed forces began a more effective strategy to isolate the FMLN from its civilian support base. Instead of aerial bombardment, government forces physically removed peasants from the Guazapa Volcano. The campaign, dubbed Operation Phoenix, displaced 1,000 civilians and captured 500 suspected FMLN combatants.¹⁹⁵ While done on a much smaller scale than in Malaya and Algeria, such passive defense measures were repeated with similar impact on other civilian populations in rebel-held regions of El Salvador.

¹⁹² Bacevich et al., *American Military Policy in Small Wars*, 32-33.

¹⁹³ Brozenick, *Small Wars, Big Stakes*, 165.

¹⁹⁴ Corum, "The Air War in El Salvador," 33. There is one considerable drawback to the extensive use of helicopters in revolutionary wars. Andrew Bacevich adroitly describes the point: "In a war that pays a premium for being *among* the people, the UH-1 has made the ESAF into an army that spends too much time *above* the people." See Bacevich et al., *American Military Policy in Small Wars*, 33.

¹⁹⁵ Byrne, *El Salvador's Civil War*, 147.

While no single aircraft stood out in El Salvador in terms of Leites and Wolf's conception of aerial police, the most effective aircraft utilized by the FAS during the war was probably the UH-1.¹⁹⁶ What the case of El Salvador does highlight are the practical dangers of an omnipresent and ubiquitous aerial force, especially as enemy tactics and anti-aircraft capabilities improve. In the first half of 1989 alone, the FMLN destroyed or damaged fifty-four aircraft of the FAS, more than the total of the preceding three years combined.¹⁹⁷ During the same year, after the introduction of the SA-7 surface to air missile, the FMLN shot down two aircraft in an eleven-day period.¹⁹⁸ The presence of such weapons does not reduce the necessity for airpower in the active defense role. It does, however, require that airpower forces be trained and equipped to effectively deal with the situation.

D. ANALYSIS

Unlike Great Britain and France, the United States has often participated in small wars as an external power, seeking to assist a partner government with its internal threat. Such intervention can bring important resources and capabilities to partner countries, but it also risks stoking resistance and creating a dependent relationship with the host society and government.¹⁹⁹ This was the case in both the Philippines and El Salvador. One interesting similarity is that despite the large influx of aircraft and materiel, the American footprint remained significantly smaller than those of Great Britain or France, thus avoiding the Americanization of these conflicts. This ensured that the conflicts remained struggles for the partner countries to win or lose.²⁰⁰

Both cases also highlight the potential limitation of aerial firepower in a small war. In both examples political intervention was required to restrict the employment of aerial bombardment to prevent the seemingly indiscriminant killing of civilians. Again,

¹⁹⁶ Corum, "The Air War in El Salvador," 41. Eventually, the FAS operated 52 UH-1H aircraft: 14 gunships and 38 utility versions. Other helicopters utilized by the FAS included nine Hughes 500MD attack helicopters, three SA-315 Lamas, and three SA-316 for a total of 67. See Corum, "The Air War in El Salvador," 35.

¹⁹⁷ Byrne, *El Salvador's Civil War*, 150.

¹⁹⁸ Byrne, *El Salvador's Civil War*, 184.

¹⁹⁹ Alan Vick et al., *Air Power in the New Counterinsurgency Era: The Strategic Importance of USAF Advisory and Assistance Missions* (Draft) (Santa Monica, CA: Rand, 2005), 78-79.

²⁰⁰ Alan Vick et al., *Air Power*, 103.

utility aircraft, such as the L-5 in the Philippines and the O-2 (and especially the UH-1 helicopter) in El Salvador, proved to be assets easily adaptable to the changing environment of the particular conflict and remained extremely relevant regardless of the nature of hostilities.

Finally, both the anti-Huk campaign and the civil war in El Salvador demonstrate that small wars are indeed not likely to be short wars and that decisive victory is not always attainable. In cases such as these, victory may equate to stalemate. The extended duration and indecisive conclusions to small wars are diametrically opposed to the desires of most airmen. As Corum and Johnson suggest, “The search for a quick, decisive victory is an integral part of the Western military culture.”²⁰¹ Unfortunately, such victories continue to be woefully absent during most of these wars.

²⁰¹ Corum and Johnson, *Airpower in Small Wars*, 436.

VI. ANALYSIS OF THE PROPER ROLE OF AIRPOWER IN SMALL WARS

Most theorists would agree that the population plays an essential if not key role in a small war. A pervasive school of thought when dealing with the struggle for the population is the familiar winning of the “hearts and minds” strategy.²⁰² Professor Bard O’Neill suggests that the constant reiteration of the need for popular support by insurgent leaders demonstrates its centrality to insurgent thinking and that government campaigns and counterinsurgency literature acknowledge winning the hearts and minds of the people explicitly.²⁰³ Leites and Wolf, however, offer that such a “hearts and minds” view stresses popular sympathies and economic conditions by concentrating on the environment that evokes rebellion.²⁰⁴

Where “hearts and minds” strategies emphasize the *demand* side of the problem, the framework presented in *Rebellion and Authority* focuses more on the *supply* side of the situation. The authors offer two reasons for placing somewhat more emphasis on the supply side of the equation. First, is that while both supply and demand are important, in most discussions the supply factors are either neglected or misconstrued. Second, is that supply conditions are more responsive in the short run and can therefore be influenced to a greater degree.²⁰⁵ In terms of airpower, the supply side focus of the Leites and Wolf framework provides a more concrete basis to assess the potential influences of airpower than the somewhat amorphous notion, at least from the perspective of airmen, of winning “hearts and minds.”

Having stepped back to look at individual instances of airpower in small wars, through the lens of Leites and Wolf’s framework, we can now take two steps forward to determine the proper role of airpower in this non-uniform arena. The remainder of this

²⁰² This often utilized phrase can be traced to General Sir Gerald Templer during the Malayan Emergency. He is quoted as saying “the answer [to the terrorists] lies not in pouring more soldiers into the jungle, but rests in the hearts and minds of the Malayan people.” As cited in Komer, *The Malayan Emergency*, 54.

²⁰³ O’Neill, *Insurgency & Terrorism*, 93.

²⁰⁴ Leites and Wolf, *Rebellion and Authority*, 28.

²⁰⁵ Leites and Wolf, *Rebellion and Authority*, 28-29.

chapter analyzes the effectiveness of airpower in small wars by evaluating its impact in terms of contemporary roles, missions, and characteristics unique to airpower.

A. AIR SUPERIORITY

While most often regarded as freedom to attack, air superiority also involves freedom *from* attack. For example, United States Air Force doctrine defines superiority as, “that degree of dominance that permits friendly land, sea, air, and space forces to operate at a given time and place without prohibitive interference by the opposing force.” The doctrine continues to define air supremacy as the degree of superiority where opposing forces “are incapable of effective interference anywhere in a given theater of operations.”²⁰⁶

Because of the subsidiary role the military plays given the political context of small wars, the achievement of air superiority is often neglected or assumed as an implicit asymmetrical advantage. During the Falklands Campaign, ground fire accounted for almost all aircraft losses (for both the Argentine and British air forces). As author Robert Scales describes, this early experience made the Royal Air Force “reluctant to further risk their valuable aircraft against ground targets until they first established unquestioned air superiority and mastery over the troublesome Argentine anti-aircraft guns.”²⁰⁷ This is not particularly astonishing given the conventional nature of the Falklands Campaign. What is more telling is the influence of such weapons during more protracted conflicts involving irregular forces. The latter stages of the civil war in El Salvador exemplify this situation. As a Department of State message summarizes: “The introduction of state-of-the-art surface to air missiles into the conflict, however, has all but neutralized the tactical advantage of the air force, affected the morale of the ground forces, and reduced the aggressiveness of ground operations.”²⁰⁸

The achievement of air superiority in a conflict, regardless of its size or nature, is an overarching principle in that it allows successful conduct of the remaining capabilities

²⁰⁶ U.S. Air Force, AFDD1, *Air Force Basic Doctrine*, <https://www.doctrine.af.mil> (accessed April 2006), 77.

²⁰⁷ Scales, *Firepower in Limited War*, 208.

²⁰⁸ U.S. *Declassified Documents I*, Department of State, “Security Assistance Report,” telegram #07072, from U.S. Embassy, San Salvador, to Secretary of State, 7 June 1991. As cited in Byrne, *El Salvador’s Civil War*, 184.

of airpower. Most advances within air superiority predominantly apply to large wars. The most significant threat to air superiority in small wars comes from the ubiquitous ground threats of relatively inexpensive small arms and shoulder-fired missiles. Defeating, or at least diminishing, the pervasiveness of these weapons remains perhaps the paramount issue for airpower in small wars. Without some relative measure of air superiority *from* these weapons, the additional capabilities of airpower in small wars are greatly diminished.

B. INTERDICTION AND LIMITING OF RESOURCES

The United States Air Force terms its distinctive worldwide interdiction capability as *global attack*. Doctrine suggests that airpower forces, such as the United States Air Force, “with its growing space forces, its intercontinental ballistic missiles and its fleet of multirole bombers and attack aircraft supported by a large tanker fleet, is ideally suited to such operations. [The] service is able to rapidly project power over global distances.”²⁰⁹ Such a capability is vital in prosecuting large wars, but high-budget items such as ballistic missiles, transcontinental bombers, and tanker fleets represent, at best, an adverse cost-to-benefit ratio given the protracted and politically sensitive nature of small wars. Some noted analysts even argue that the entire concept of major military operations involving such large, sophisticated military forces may be a thing of the past or at least an aberration.²¹⁰ The cases presented here demonstrate the oftentimes limited ability of even these most technologically advanced airpower forces to interdict men, materiel, and support from both external and internal sources during small wars.

When dealing with external support, it critical to have a clear picture of the amount of support being provided and the impact it has. This is necessary to avoid misdirecting limited resources if the external support is not a major contributor to the opposition’s gains or is of little or no consequence. Exaggeration of Soviet and Cuban assistance to the FMLN early in the civil war in El Salvador greatly led to mistakes regarding the real reasons for the insurgents’ initial successes: the indigenous support they received. A study of El Salvador that over emphasized the external support but

²⁰⁹ AFDD 1, *Air Force Basic Doctrine*, 79.

²¹⁰ See Martin van Creveld, *The Transformation of War* (New York: The Free Press, 1991). As cited in Dennis M. Drew, “Air Power in Peripheral Conflict: From the Past, the Future?” in *The War in the Air: 1914-1994* edited by Alan Stephens (Faribain, Australia: Air Power Studies Centre, 1994), 235.

ignored the political, social, and economic elements could lead to the faulty conclusion that simply denying external inputs could have quelled the insurgency.²¹¹

The French experience in Algeria, on the other hand, represents a situation where support from external sources, and an appropriate input-denial strategy, was paramount. The barrages erected by the French, while extremely costly in terms of men, resources, and airpower assets, proved vitally important and effective at limiting support from Algeria's neighboring bases of support. Then again, many opposition forces encountered in a small war environment do not require large, continuous sources of inputs. Both the Huks in the Philippines and the MCP in Malaya remained effective fighting forces for nearly a decade (twelve years in the case of Malaya) despite the absence of an external source of support or sanctuary. These cases, along with that of the FMLN, demonstrate the effectiveness of opposition forces, especially those waging guerrilla warfare, at supporting themselves largely if not exclusively through endogenous sources. Supply lines from endogenous sources are vastly reduced in length thus making their detection and interdiction by airpower that much more difficult.

Finally, all of the cases presented here (save that of the French in Algeria) demonstrate the limiting effect the environment imposes on the interdiction capability of airpower. The topographical features and dense foliage of Malaya, Indochina, the Philippines, and El Salvador all afforded opposition groups with internal sanctuaries. The environment itself helped neutralize the technological capabilities of airpower and reduced the opposition to at best, fleeting targets of opportunity.²¹² Even the geographical remoteness and harsh climactic conditions of the Falkland Islands limited the interdiction capabilities of British airpower. Where the topography benefits the opposition, airpower had a more enduring effect in terms of psychological operations and disruption of enemy activities.

²¹¹ O'Neill, *Insurgency & Terrorism*, 183; 200.

²¹² Adverse topography and terrain had a similar impact on ground forces as well. In Malaya it is estimated that approximately 5,000 Communists were being hunted by 230,000 regular soldiers and police. It took 1,000 man-hours for each communist killed during the Emergency. See O'Neill, *Insurgency & Terrorism*, 72.

C. HARASSMENT, DISRUPTION, AND PSYCHOLOGICAL OPERATIONS

One important benefit that favorable topography affords opposition forces is the seclusion of their base areas. Such bases allow the opposition to plan, train, rest, recuperate, marshal equipment, and organize people in relative security.²¹³ While such static targets certainly pose viable targets for interdiction by airpower, they tend to remain elusive to detect and attack. The more elusive the opposition becomes the more prominent “soft” measures of airpower turn out to be. Leites and Wolf suggest that it is possible to reduce the productivity of the opposition. They suggest that even large-scale attacks by B-52 bombers, while not necessarily crippling insurgents from kinetic effects, tend to disrupt the enemy by means as simple as causing them to lose sleep.²¹⁴ Airpower author Philip Towle agrees. He contends that “In areas where no civilians are living and where guerrillas are operating, attacks by heavy bombers can have a considerable impact on rebels’ morale, even when they do not actually kill or wound many of them.”²¹⁵

The implied drawback in Towle’s statement is critically important. Rarely in a small war is the opposition separate from the civilian population. Any attack can have dramatic consequences. Given the diplomatic and asymmetric context of small wars, any negative effects of air attacks, especially large-scale effects given the considerable destructive capacity of conventional bombers, can have strategic-level impacts. Simply put, “there is a political price to pay when airpower in the form of air strikes is used.”²¹⁶ Both the Salvadoran and Philippine Air Forces had to be forced to limit their attacks in order to reduce the actual and perceived indiscriminateness of their bombings. Similarly, French operations in Indochina and Algeria (both in the air and on the ground) created adverse reactions when they were conducted with wanton disregard for the population. In Algeria, the French sweeps through populated areas served to be “the best recruiting agent” for the FLN insurgents.²¹⁷

²¹³ O’Neill, *Insurgency & Terrorism*, 74.

²¹⁴ Leites and Wolf, *Rebellion and Authority*, 79.

²¹⁵ Towle, *Pilots and Rebels*, 210.

²¹⁶ Corum and Johnson, *Airpower in Small Wars*, 430.

²¹⁷ Horne, *A Savage War of Peace*, 110.

One commonality to be found across the cases (except for the Falklands for reasons discussed in Chapter III) was the beneficial effect of airborne psychological operations. Both leaflet drops and broadcast flights were employed in every theater, demonstrating the relative ease with which aircraft can be retrofitted to perform such duties. Even so, these cases suggest an important caveat to the proper utilization of airpower for psychological operations. The involvement and knowledge of indigenous personnel is paramount to the success of such operations. Psyops are ineffective if they do not transmit the desired information or are not received and interpreted appropriately. An excellent example from the Philippines was the infamous “The Eye Leaflet” which simply consisted of a pencil drawing of a single open eye. While not overly compelling to most Westerners, a Huk soldier who found one these leaflets was “shaken at the thought of his secure territory being violated by some unseen enemy.”²¹⁸ While the positive effects of psychological operations were often difficult to quantify, in most every case they played a significant role. In Malaya, for example, the psychological weapon “made a major contribution to the slow erosion and ultimate collapse of the insurgent’s morale that presaged their final defeat.”²¹⁹

D. AIR ATTACK AND THE KINETIC APPLICATION OF AIRPOWER

While most analysts would likely agree that there is no single correct solution for applying the kinetic effects of airpower in small wars, these case studies push this assertion one step further. They demonstrate that the effectiveness of airpower as the traditional instrument of applying kinetic force is directly related to the proclivity of the opposition to assume the guise of a conventional belligerent. While not fundamentally astonishing, this finding has profound implications for the training and fielding of airpower forces. On the conventional end of the continuum of small wars, represented by the Falklands Campaign, it is easy to see that the overwhelming positive impact of airpower was in the counterforce role. Supporting roles such as reconnaissance and transport were important, but not as singularly critical as the ground attack and air defense missions.

²¹⁸ Greenberg, *The Hukbalahap Insurrection*, 117.

²¹⁹ Air Commodore P E. Warcup, quoted in A. H. Peterson, G. C. Reinhardt, and E. E. Conger, eds., *Symposium on the Role of Airpower in Counterinsurgency and Unconventional Warfare: The Malayan Emergency* (Santa Monica, CA: Rand, 1963), 68. As cited in Brozenick, *Small Wars*, 114.

Authors James Corum and Wray Johnson accurately suggest that when the enemy concentrates “in large forces and aspire[s] to conventional or positional warfare, they become especially vulnerable to air attack. Conventional military operations require heavy weapons, logistical bases, lines of communication, and headquarters element to coordinate operations. All of these are excellent targets for airpower.”²²⁰

The kinetic application of airpower, and its related psychological effects, does have limitations. General Vo Nguyen Giap noted that his forces ability to stand up to firepower increased with experience. The terrifying effects of napalm and high explosive ordnance that proved so successful during the battle for Vinh-Yen passed quickly as the Viet Minh began to realize that these weapons were not as destructive as they first appeared to be.²²¹ This was certainly not the case for Argentinean soldiers who continued to be unnerved by British bombardment. Author Robert Scales provides an interesting analysis of why the psychological effect of bombings that were successful in the Falklands became a wasted effort in Vietnam:

The answer lies in several factors: the nature of the war, the character of the enemy, and the manner in which the program of fire was conducted. The old saying, ‘familiarity breeds contempt,’ applies here. No matter how effective shell fire might be, in the course of a long war soldiers learn to accommodate and become accustomed to even the most fearsome bombardment, particularly when they realize that shelling often does little harm. But in a short and sharp conflict like the Falklands, the Argentines did not have time to become inured.²²²

Thus, in addition to weighing the potential negative strategic-level effects of bombing, given the possible backlash in popular support at the perceived indiscriminateness of aerial bombardment, airpower theorists must consider yet another factor in the diminution of the effectiveness of aerial attack. If repeated bombing actually inures enemy combatants, both uniformed and irregular, then popular tactics, techniques, and procedures such as high speed low altitude buzzing of enemy forces during “show of force” passes are not likely to cause appreciable reactions in the opposition following their first few exposures.

²²⁰ Corum and Johnson, *Airpower in Small Wars*, 428.

²²¹ Scales, *Firepower in Limited War*, 49.

²²² Scales, *Firepower in Limited War*, 211.

In a protracted small war, this combination of popular estrangement and opposition inurement resulting from aerial attacks could prove to be the single most depreciatory aspect to the overall effectiveness of airpower.

E. SURVEILLANCE, PRESENCE, AND INFLUENCE

The United States Marine Corps' revision to the eminent Small Wars Manual of 1940 contends that small wars are—first and foremost—information wars.²²³ Surveillance, reconnaissance, and intelligence gathering all fall within this rubric and essentially serve as the dominant aspect of the counterforce application of airpower. Maintaining informational advantages even surpasses the direct application of traditional firepower. A key facilitator of airpower's information gathering ability is embedded in the unique advantages of airpower to cover vast amounts of territory.

Chairman Mao Tse-tung greatly valued expansive territory. He claimed that, “the enemy, employing his small forces against a vast country, can only occupy some big cities and main lines of communication and part of the plains. Thus there are extensive areas in the territory under his occupation which he has had to leave ungarrisoned, and which provide a vast arena for our guerrilla warfare.”²²⁴ Airpower, utilizing its speed, range, and persistence diminishes the importance of the size of territory that previously benefited the opposition. The French experience in Algeria, a country three times the size of Texas, offers a superlative example. Reiterating the words of Arthur Campbell, “Before the onset of air power, Lawrence and his Arabs were able to retreat at will into the Arabian deserts, but the FLN [National Liberation Front] in Algeria, opposed by a powerful French air force, were denied access to the vast reaches of the Sahara.”²²⁵

Again, two significant caveats exist regarding the role of airpower in surveillance and influence. First, as discussed previously, environmental factors significantly degrade the ability of airpower platforms to detect and observe elusive opponents. This limitation, however, is mitigated by the persistent presence of airpower which limits the ability of elusive opponents to mass for sizeable attacks. The FMLN in El Salvador, the

²²³ U.S. Marine Corps, “Small Wars,” 53.

²²⁴ Mao Tse-Tung, “On Protracted War.” <http://www.rrojasdatabank.org/mao12.htm> (accessed April 2006).

²²⁵ Arthur Campbell, *Guerrillas* (New York: The John Day Co., 1968), 283. As cited in O'Neill, *Insurgency & Terrorism*, 72.

Huks in the Philippines, and the Viet Minh in Indochina all tread into large-scale conventional attacks. In all three cases, the massed enemy forces proved easily identifiable and lucrative targets for air attacks. The result of punishing air strikes forced all three opposition groups to withdraw from positional warfare back to guerrilla operations. While not eliminating enemy activity, airpower can help confine a conflict and deny the opposition some escalation options.²²⁶

The second caveat is that the rural locus for opposition is gradually being eclipsed by urban environments. Large sprawling cities, often ringed by unmapped shantytowns, provide an increasingly attractive and conducive environment for insurgent activity. Large numbers of unemployed and restless men provide a vast pool for recruitment, and densely packed disgruntled residents serve as an echo chamber for popular movements.²²⁷ The explanation for this development is simple: urban environments are swelling rapidly. The United Nations estimates that while rural populations will remain virtually steady, urban populations will continue to soar. By the year 2025, more than 5 billion people, or 61 percent of humanity, will be living in cities.²²⁸ Urban environments have long stymied the effectiveness of airpower. Even during the Battle for Stalingrad in World War II, General Chuikov, the Soviet commander knew the limiting effects of urban terrain on airpower when he stated:

I came to the conclusion that the best method of fighting the Germans would be close battle, applied day and night in different forms. We should get as close to the enemy as possible so that his air force could not bomb our forward units. . . . it seemed to me that it was precisely here, in the fighting for the city, that it was possible to force the enemy into close fighting and deprive him of his trump card—his air force.²²⁹

²²⁶ Vick et al., *Air Power*, 109.

²²⁷ Vick et al., *Air Power*, 17.

²²⁸ Eugene Linden, "The Exploding Cities of the Developing World," in *Globalization and the Challenges of a New Century*. Edited by Patrick O'Meara, Howard D. Mehlinger, and Matthew Krain (Bloomington, IN: Indiana University Press, 2000), 407.

²²⁹ Vasil I. Chuikov, *The Battle for Stalingrad* (New York: Holt, Rinehart, and Winston, 1964), 72. As cited in Major Timothy Staffold, "The Role of Airpower in Urban Warfare: An Airman's Perspective," Air Command and Staff College, Wright Flyer Paper no. 6 (December 1998), http://aupress.au.af.mil/Wright_Flyers/Text/wf06.pdf (accessed April 2006), 15.

A final consideration when dealing with the topic of airpower presence is the exceptional cost of contemporary airpower platforms.²³⁰ Naturally, rising costs equate to fewer available aircraft. The tangential effects this reduction of aircraft have on the presence and influence aspect of airpower, while not necessarily quantifiable, are likely to be profound. In every case presented in this work, low-cost but dependable aircraft fit the role envisioned by Leites and Wolf of the so-called “aerial police” aircraft which provide both the symbol and the reality of the government’s presence and protection. One potential remedy to the conundrum of high-cost but low-quantity fleets of modern aircraft is the increased production and utilization of unmanned aerial vehicles (UAVs) to fill the role of the aerial police force. While the merits and detriments of such a solution are beyond the scope of this work, it suffices to say that UAVs may have a difficult time performing to the same caliber as venerable aircraft like the L-5, T-6, T-28, and UH-1 did in the cases presented here.²³¹

F. AIR MOBILITY AND SUPPLY

If the kinetic role of airpower is limited in the small war environment, the roles of air mobility and supply continue to be the cornerstone of airpower support. Regarding the supporting role of airpower in small wars, as exemplified in every case presented in this thesis, the regional-mobility aspect of supplying, resupplying, and supporting fielded forces—whether military, political, or even friendly guerrilla forces—can become the determining factor in the campaign’s overall strategy.

²³⁰ A dramatic example is the cost to procure the F-22 Raptor for the United States Air Force. Flyaway costs (which include the costs associated with procuring one aircraft, including the airframe, engines avionics, and other mission equipment) for a single aircraft in 2003 were \$178 million. By way of comparison, the United States assistance to El Salvador over twelve years included \$1 billion in military aid, with almost one quarter of this amount provided to the Salvadoran air force. For the price of just over one F-22, the United States trained nearly every officer in the FAS and provided scores of aircraft for a period spanning over a decade. F-22 figures obtained from <http://www.globalsecurity.org/military/systems/aircraft/f-22-cost.htm> (accessed April 2006); El Salvadoran figures from Corum and Johnson, *Airpower in Small Wars*, 327.

²³¹ A considerable grass roots movement exists to reestablish a cost-effective, but dependable and maintainable aircraft platform to operate in a counterinsurgency role, specifically to redress some of the inimical aspects resulting from high-cost contemporary aircraft presented here. For an excellent analysis of the use of the OV-10D in such a role see Colonel Robyn Read, “Effects-Based Airpower for Small Wars, Iraq after Major Combat,” *Air & Space Power Journal* 19, no. 1 (Spring 2005). See also Major Brian Downs, “Unconventional Airpower,” *Air & Space Power Journal* 19, no. 1 (Spring 2005); and Captain George C. Morris, “The Other Side of the Coin: Low-Technology Aircraft and Little Wars,” *Airpower Journal*, (Spring 1991).

During the Falklands Campaign, Air Chief Marshal Sir Michael Armitage considered that “the transport force was vital to the success of the whole operation for the reconquest of the Falklands.”²³² Regarding air transport in Malaya, Colonel Dennis Drew suggests that “there is total agreement about the importance of air transport to the counter insurgency effort” and that air transport was the RAF’s key role in the Malayan Emergency.²³³ The air mobility and supply efforts of the French and United States, however, highlight two closely related adverse effects of airpower.

First, the French demonstrated the over-reliance on a single source of supply. Airpower units were stretched to the absolute limits for both man and machine. The ill-fated attempt to occupy Dien Bien Phu as an outpost exclusively supplied by airpower is testament to this drawback. In addition to the limits imposed by the small number and configuration of the supply aircraft, additional factors such as adverse terrain, weather, and improved enemy defenses negated the ability of the transports to effectively supply the outpost against the siege of the Viet Minh. Second, and closely related to the first, is the over-reliance on the transport ability of airpower, especially that of rotary-wing aircraft. Andrew Bacevich explains the considerable drawback to the extensive use of helicopters in revolutionary wars: “In a war that pays a premium for being *among* the people, the UH-1 has made the ESAF into an army that spends too much time *above* the people.”²³⁴ Counterinsurgency strategist Colonel John Waghelstien agrees with this contention. He contends that forces should be “among the population, on patrol, in small numbers, showing the flag and talking to the villagers, not flying over them at 5,000 feet.”²³⁵ Simply stated, the air mobility capability of airpower must be used to support, and not supplant, ground force maneuver and interaction with the population.

²³² R. G. Funnell, “‘It was a Bit of a Close Call’: Some Thoughts on the South Atlantic War” in *The War in the Air: 1914-1994* edited by Alan Stephens (Faringham, Australia: Air Power Studies Centre, 1994), 227. An interesting historical point is that the Argentines used airlift effectively as well. They operated C-130 aircraft into Port Stanley with relative impunity right up until the night before their surrender. The Argentines used such missions to bring in supplies and personnel and to evacuate wounded. No Argentine C-130 aircraft were lost on these missions. See Funnell, “‘It was a Bit of a Close Call,’” 228.

²³³ Drew, “Air Power in Peripheral Conflict,” 244-245.

²³⁴ Bacevich et al., *American Military Policy in Small Wars*, 33.

²³⁵ John D. Waghelstein, “Ruminations of a Pachyderm or What I Learned in the Counterinsurgency Business,” *Small Wars and Insurgencies* 5, no. 3 (Winter 1994), 367.

G. ASSESSMENT

As stated previously, small wars are conflicts in which the political and diplomatic context, and not the military disposition of the combatants, is often the determining factor. Author Mark Clodfelter suggests that “Air power’s political efficacy varies according to many diverse elements and that no specific formula guarantees success.”²³⁶ It would be denigrating and blinding to suggest that a universal principle exists to determine the proper role of airpower in small wars. These six cases and the analysis in this chapter suggest that the typologies of no two conflicts were ever identical and the application of airpower varied accordingly. In general, however, it seems reasonable to assert that the non-kinetic roles of airpower are vastly more important than kinetic roles; environmental factors will weigh heavily on every airpower role and mission; and mobility, supply, and resupply often prove to be the most vital airpower contributions in support of the overall campaign in a small war.

²³⁶ Clodfelter, *The Limits of Air Power*, 203-204.

VII. CONCLUSION AND ADDITIONAL CONSIDERATIONS FOR THE APPLICATION OF AIRPOWER

As can be seen, no two small wars are exactly the same. The opposition pursues various goals through multiple and often changing strategies, using a variety of techniques and methods, and often poses different threats to the established government.²³⁷ These small wars are not a new phenomenon and most Western countries have felt the frustrations they cause. Since World War II, as Martin van Creveld poignantly describes:

[f]rom France to the United States, there has scarcely been one ‘advanced’ government in Europe and North America whose armed forces have not suffered defeat at the hands of underequipped, ill-trained, ill-organized, often even ill-clad, underfed, and illiterate freedom fighters or guerrillas or terrorists; briefly, by men—and, often, women, who were short on everything except high courage and the determination to endure and persist in the face of police operations, counterinsurgency operations. . . and whatever other types of operations were dreamt up by their masters.²³⁸

Determining the proper role of airpower in conflicts such as these is a difficult undertaking. With the benefit of years of analysis and intellectual thought, it is possible to analyze individual conflicts and appreciate both the positive and negative effects airpower played within the context of that particular setting. It would, however, be unprincipled to offer more than a general ranking of importance to the various operational roles airpower played within the confines of even a single conflict, as the nature of most small wars continually shifts over the span of many years. Beyond the generalities discussed in the previous chapter, this study will close by offering some additional considerations for the application of airpower in small wars.

A. RECONSIDERATION OF COMMAND AND CONTROL ISSUES

Just as airpower doctrine and thought is more focused on large-scale conventional warfare, so are its typical organizational structures and command and control relationships. And just as current doctrine limits the efficacy of airpower in small wars,

²³⁷ O’Neill, *Insurgency & Terrorism*, 156.

²³⁸ Martin van Creveld, *The Rise and Decline of the State* (Cambridge: Cambridge University Press, 1999), 395. As cited in Vick et al., *Air Power*, 50.

so does the dogmatic mantra of centralized command and decentralized control. While the British structure during the Malayan Emergency serves as the canonical case of a successful organizational restructuring, the French had perhaps the most effective command and control system established.²³⁹ In both Indochina and Algeria, airpower assets were flexibly apportioned within sectors or smaller zones, and light observation and attack aircraft were assigned directly to individual ground units. Furthermore, the organization of air force units mirrored that of the ground forces to further alleviate coordination problems. This flexible, decentralized arrangement increased military success and ameliorated traditional tensions between the services.²⁴⁰ Similarly, Rand researcher Alan Vick suggests that “It is more accurate and helpful to think of air power—from whatever service—as a partner with ground and other military forces rather than emphasize who is supporting or supported.”²⁴¹

B. MAXIMIZING THE INHERENT FLEXIBILITY OF AIRPOWER

Airpower provides the decisive flexibility that normally the opposition enjoys.²⁴² In most small wars, the enemy can move quickly, benefiting from a supportive or at least indifferent population. Insurgents and guerrillas can live off the land when necessary and blend into the surrounding population when required. When they choose to attack, they generally enjoy the advantage of the initiative. They are able to choose the time and place to conduct operations and will often choose isolated targets, allowing them to attack then disappear before reinforcements arrive.²⁴³ A classic example was the predilection of the Viet Minh to attack and overrun geographically isolated French outposts in Indochina.

Airpower provides one means to match the flexibility of friendly forces. The speed and range of aircraft allow the rapid movement of ground forces over difficult terrain and obstacles to serve as reinforcements. The ferret forces in Malaya, and tactical

²³⁹ Vick et al., *Air Power*, 29.

²⁴⁰ Flinham, *Air Wars and Aircraft*, 80-82. Given this unconventional command and control architecture, it is not surprising that American Air Force advisors overseeing operations in Indochina felt that French air forces were running helter skelter around the countryside.

²⁴¹ Vick et al., *Air Power*, 107.

²⁴² Corum and Johnson, *Airpower in Small Wars*, 434.

²⁴³ Vick et al., *Air Power*, 109.

troop movements in the Falklands and El Salvador exemplify this aspect of the flexibility provided by airpower. Finally, the retargeting capability of strike aircraft and close air support platforms can be utilized once the opposition forces are identified.

C. UNDERSTANDING THE CAPABILITIES AND LIMITATIONS OF TECHNOLOGY

Author Mark Clodfelter suggests that military technology and airpower capability have created “a modern vision of air power that focuses on the lethality of its weapons rather than on that weaponry’s effectiveness as a political tool.”²⁴⁴ Technological advances are certainly nothing to shy away from. The establishment of independent air forces testifies to the fundamental importance technology plays in these services. Revolutionary shifts in technology have kept airpower in a nearly perpetual state of transformation. The danger, however, resides in the voracious desire to embrace technology—an embrace that should neither outstretch capability nor supplant doctrine.

Similarly, technological advances do not, in and of themselves, guarantee compatibility with all manner of warfare. Embracing technological advances specifically optimized for large-scale war, by definition, limits the effectiveness of airpower in supporting small wars. From a small wars perspective, the solution is not to inhibit technological advances, but to understand how such capabilities do and do not fit within a small war analytical framework (such as the one used here) as well as how they fit given the political and diplomatic milieu of small wars. Andrew Bacevich explains the pernicious aspects of using technology specifically designed for larger wars:

At the other end of the spectrum of conflict, however, technology’s role tends to be more ambiguous. Selectively employed, it offers tremendous advantages. Yet fascination with technological capabilities should not blind Americans to technology’s limitations in small wars. Certain capabilities may be irrelevant or even counterproductive. [Small wars], therefore, demand special caution in bringing to bear only those technologies that will have positive effects.²⁴⁵

D. EDUCATION, INFLUENCE, AND LEADERSHIP

As airpower theorist Colonel Dennis Drew suggests, small wars are not just large wars writ small, they are at least as different from conventional war as conventional war

²⁴⁴ Clodfelter, *The Limits of Air Power*, 203.

²⁴⁵ Bacevich et al., *American Military Policy in Small Wars*, 31.

is imagined to be different from nuclear war.²⁴⁶ Unfortunately, small war theory is woefully lacking in formal education opportunities for airpower professionals. Education regarding the social, psychological, cultural, and political aspects of small wars should be established at military academies and staff colleges.²⁴⁷ Of special importance is the historical study of previous small wars to appreciate their defining characteristics, combinations of which may offer guidance regarding future scenarios.

The lessons of this education will not be inculcated in the lower echelons without unrelenting support by professional senior military leaders. Only through their guidance, actions, and programmatic decisions can the conventional one size fits all dogma of most airpower forces be overcome.²⁴⁸ Mark Clodfelter astutely summarizes the point:

Bombing doctrine remains geared to fast-paced conventional war, and the conviction that such doctrine is appropriate for any kind of conflict permeates [airpower forces]. Until air commanders and civilian officials alike realize that air power is unlikely to provide either ‘cheapness’ or ‘victory’ in a guerrilla war—and that success in such a conflict may well equate to stalemate—the prospect of an aerial Verdun will endure.²⁴⁹

Without the influential support of senior military leaders, education on the subject of small wars will be dismissed as an aberration or passing fancy. Without effective education, the advantages afforded by airpower within the context of small wars will likely be misapplied or underutilized. Only by taking one step back to fully understand and appreciate the contextual basis of this form of conflict can airpower professionals take two steps forward to become the most effective fighting force possible, regardless of the nature of the conflict.

²⁴⁶ Drew, *Insurgency and Counterinsurgency*, 11.

²⁴⁷ Vick et al. *Air Power*, 131.

²⁴⁸ Vick et al., *Air Power*, 130.

²⁴⁹ Clodfelter, *The Limits of Air Power*, 210.

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